Blocking Interstate Natural Gas Pipelines: How to Curb Climate Change While Strengthening the Nation's Energy System

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INTRODUCTION

Over the past decade, the growth of natural gas, propelled by the fracking boom, has played a pivotal role in meeting the nation's ever-expanding energy needs.[1] Simultaneously, it has helped lower energy costs,[2] reduce greenhouse gas emissions,[3] and diminish

1. *See* John Muyskens, Dan Keating & Samuel Granados, *Mapping How the United States Generates its Electricity*, WASH. POST (Mar. 28, 2017), http://www.washingtonpost.com/graphics/national/power-plants/?utm_term=.02cc9152e76f [https://perma.cc/43GU-JKE5] (discussing how natural gas, now the source of 34% of the nation's electricity, has surpassed coal as the most common source of electricity generation in the United States).

2. *See* Marian Tupy, *Natural Gas Drives Energy Costs to Record Lows*, REASON (Mar. 7, 2017), http://reason.com/archives/2017/03/07/natural-gas-drives-energy-costs-to-recor [https://perma.cc/45J9-PD5K] (crediting natural gas for low energy prices and helping to revive the United States' economy).

dependence on foreign energy.[4] Despite these benefits, and the fact that the United States has an abundance of extractable natural gas,[5] the future of this resource as a solution to the nation's energy demand remains uncertain. This uncertainty is largely attributable to the roadblocks preventing the development of interstate natural gas pipelines—the safest[6] and most efficient[7] means of transporting natural gas.

3. *See* Alexandra B. Klass & Jim Rossi, *Reconstituting the Federalism Battle in Energy Transportation*, 41 HARV. ENVTL. L. REV. 423, 434 (2017) (noting that while natural gas produces large quantities of greenhouse gas emissions, the emissions produced are far fewer than would otherwise be released by coal-fired power plants for the equivalent amount of energy).

4. *See* Daniel Yergin, *Congratulations, America. You're (Almost) Energy Independent*, POLITICO MAG., Nov. 2013, http://www.politico.com/magazine/story/2013/11/congratulations-america-youre-almost-energy-independent-now-what-098985 [https://perma.cc/C8M9-K4BX] (detailing the degree to which natural gas has allowed the United States to become more independent from the Middle East and its energy sources).

5. *How Much Natural Gas Does the United States Have, and How Long Will It Last?*, U.S. ENERGY INFO. ADMIN. (Apr. 9, 2018), http://www.eia.gov/tools/faqs/faq.php?id=58&t=8 [https://perma.cc/4T2V-HNFH]. There are roughly 2,462 trillion cubic feet of recoverable natural gas in the United States, which is enough to last an estimated 90 years under the 2016 rate of consumption. *Id.*

6. *See, e.g.*, DIANA FURCHTGOTT-ROTH, MANHATTAN INSTIT. FOR POL'Y RESEARCH, PIPELINES ARE SAFEST FOR TRANSPORTATION OF OIL AND GAS (2013), http://www.manhattan-institute.org/pdf/ib_23.pdf [https://perma.cc/LLL3-49UZ]; Kenneth Green & Taylor Jackson, *Safety in the Transportation Oil and Gas: Pipelines or Rail?*, FRASER INSTIT. (Aug. 13, 2015), http://www.fraserinstitute.org/research/safety-transportation-oil-and-gas-pipelines-or-rail [https://perma.cc/HZ89-QM8T] (finding that the vast majority of pipeline accidents cause minimal damage, and that taking into consideration the amount of product moved, a spilling incident is 4.5 times less likely to occur by pipeline than by rail); Kevin C. Gillen, *Commentary: Pipelines Safely, Efficiently Transport Oil and Gas*, THE INQUIRER: OPINION (Phila.) (Nov. 25, 2016, 3:01 AM), http://www.philly.com/philly/opinion/20161125_Commentary__Pipelines_safely__efficiently_transport_oil_and_gas.html [https://perma.cc/S99Y-PLZE] (explaining that while 70 percent of all liquid energy output in the United States is transported by pipeline, pipelines are far less likely to experience an incident of spillage than transportation by road or rail). *But see* James Conca, *Pick Your Poison for Crude—Pipeline, Rail, Truck or Boat*, FORBES (Apr. 26, 2014, 10:35 AM), http://www.forbes.com/sites/jamesconca/2014/04/26/pick-your-poison-for-crude-pipeline-rail-truck-or-boat/ [https://perma.cc/8FS7-LJMJ] (arguing that the safest method for transportation depends on which kind of damage one considers worst: human death, property destruction, land or water contamination, volume of oil spilled, habitat destruction, or CO_2 emissions).

7. *See* Phil Davies, *Busting Bottlenecks in the Bakken*, FEDGAZETTE (Minneapolis) (Apr. 23, 2013), http://www.minneapolisfed.org/publications/fedgazette/busting-bottlenecks-in-the-bakken [https://perma.cc/LF8V-CAFR] (noting that shipping crude oil by rail costs $10 to $15 per barrel, depending on the destination, while shipping via pipeline costs roughly $5 per barrel); *Pipelines Are the Most Cost-Effective Mode of Energy Transportation*, PENN. ENERGY INFRASTRUCTURE ALL. (July 26, 2017), http://paallianceforenergy.com/pipelines-cost-effective-mode-energy-transportation/ [https://perma.cc/V3H3-GJDH] (wherein economist

The most formidable roadblock to the construction of interstate natural gas pipelines is Section 401 of the Clean Water Act ("Section 401"),[8] which gives states the power to block construction of any pipeline that may interfere with their water quality standards.[9] States' use of this "veto" power has escalated in recent years, in what appears to be an attempt to reduce carbon emissions and curb climate change.[10] This escalated use of Section 401 has led to widespread gridlock of pipeline construction,[11] large quantities of unutilized natural gas,[12] and a suboptimal energy system.[13]

This Note proposes legislation that would prevent states from blocking construction of interstate natural gas pipelines within their borders without first showing that a more cost-effective alternative for supplying the energy exists. Determining the cost-effectiveness of a project requires consideration of all costs, including the environmental damage, associated with the project. To ensure that these costs, specifically those associated with climate

Kevin Gillen argues that gas transport by rail, although cheaper than transport by truck, is two to three times more expensive than transport by pipeline).

8. *See infra* Part II.A.

9. 33 U.S.C. § 1341(a) (2018).

10. *See infra* notes 171–79 and accompanying text.

11. *See infra* Part II.A.

12. *See The Northeast Desperately Needs More Pipelines*, INSTIT. FOR ENERGY RESEARCH (May 4, 2017), http://instituteforenergyresearch.org/analysis/northeast-desperately-needs-pipelines/ [https://perma.cc/2GYZ-9SXN] (finding that 5.1 billion cubic feet per day of natural gas capacity has been lost by blocked pipelines in the Northeast—an amount that is roughly 25 percent more than the region's existing gas capacity—and attributing the region's higher gas prices to this lack of infrastructure).

13. *See* AM. SOC'Y OF CIVIL ENG'RS, 2017 INFRASTRUCTURE REPORT CARD: ENERGY 1–2 (2017) https://www.infrastructurereportcard.org/wp-content/uploads/2017/01/Energy-Final.pdf [https://perma.cc/DCW6-6GYH] (giving the nation's energy infrastructure a D+ grade, arguing that the aging energy system needs to be replaced, and reasoning that the lack of adequate capacity "raises concerns with distribution, reliability, and cost of service, producing constraints for delivering power from remote generation sites, specifically from renewable sources, to consumers"); Klass & Rossi, *supra* note 3, at 427 (arguing that construction of natural gas pipelines may be necessary to expand the congested energy system and its aging infrastructure); Tim O'Connor, *What This Summer's Heat Waves Tell Us About America's Electric Grid*, ENVTL. DEF. FUND: ENERGY EXCHANGE BLOG (July 26, 2018), http://blogs.edf.org/energyexchange/2018/07/26/what-this-summers-heat-waves-tell-us-about-americas-electric-grid/ [https://perma.cc/EE49-WXEN] (discussing how the nation's electric grid must be strengthened in order to meet the nation's expanding energy demands). *But see* Steve Huntoon, *Electric Infrastructure: Sky Keeps Not Falling*, RTO INSIDER (Apr. 17, 2017), http://www.rtoinsider.com/electric-infrastructure-41548/ [https://perma.cc/H9B7-M93F] (arguing that the American Society of Civil Engineers was wrong to conclude in their 2017 report that the nation's energy system was at risk of failure).

change, are adequately accounted for, each analysis must incorporate the Social Cost of Carbon ("SCC").[14] In so doing, the SCC should be valued by the states, since the federal figures have been severely devalued by an Executive Order issued by President Trump in March 2017.[15]

Part I of this Note provides background on the statutes involved in the construction of interstate natural gas pipelines. It also discusses the purpose of, and the controversy surrounding, the SCC. Part II examines how the courts of appeals and Federal Energy Regulatory Commission ("FERC") have responded to the states' increasing use of Section 401 to block interstate natural gas pipelines. It then discusses President Trump's Executive Order devaluing the federal SCC and explores the various ways in which states have incorporated the SCC into their own energy policies. Finally, Part III argues that states should no longer be permitted to veto interstate natural gas pipelines by withholding water quality certification, but only by showing there is a more cost-effective means of supplying the energy, as determined through cost-benefit analyses that incorporate a state-valued SCC.

I. NATURAL GAS PIPELINES AND THE SOCIAL COST OF CARBON: UNDERSTANDING THE BACKGROUND

Part I provides an introduction to the laws that regulate interstate natural gas pipelines and details both the history and controversy behind the SCC. Section I.A outlines the federalism issues that result from the statutes implicated in the construction of interstate natural gas pipelines. Section I.B describes the emergence of the SCC, its role in the promulgation of federal regulations, and the debate over its estimated value.

14. The SCC is a number, or range of numbers, intended to monetize the damages caused by emitting one metric ton of carbon dioxide into the atmosphere. Jayni Foley Hein, *Federal Lands and Fossil Fuels: Maximizing Social Welfare in Federal Energy Leasing*, 42 HARV. ENVTL. L. REV. 1, 30 (2018). Furthermore, "the SCC" does not refer to any specific value, but rather to the tool itself. *Id.*

15. Promoting Energy Independence and Economic Growth, Exec. Order 13,783, 82 Fed. Reg. 16,093 (Mar. 28, 2017).

A. Interstate Natural Gas Pipelines

1. Federal Power Bolstered Through the Natural Gas Act

The Natural Gas Act of 1938 ("NGA") regulates the use of natural gas and the construction of natural gas pipelines.[16] Congress passed the NGA in response to emerging changes in the energy market and to protect consumers from the monopoly power of the natural gas pipeline industry.[17] To achieve this purpose and regulate the price of natural gas, control over the transportation of natural gas in interstate commerce was given to the Federal Power Commission, now FERC.[18]

But soon after Congress passed the NGA, states, often influenced by coal or railroad companies, began refusing to grant the eminent domain necessary for pipeline installation.[19] Congress responded by expanding the NGA to give FERC the authority to grant the power of eminent domain to pipeline developers.[20] The developers, in turn, were permitted to use that power when voluntary purchase of the necessary land proved infeasible.[21]

Beyond eminent domain, FERC has broad authority over the approval of all natural gas pipelines. Section 7 of the NGA dictates that a pipeline can be built only if FERC determines it to be in the public interest and grants "a certificate of public convenience and necessity."[22] In determining whether to grant a certificate, FERC considers "the enhancement of competitive transportation alternatives, the possibility of overbuilding, the avoidance of unnecessary disruptions to the environment, and the unneeded exercise of eminent domain."[23] Any party "aggrieved"[24] by a FERC

16. 15 U.S.C. §§ 717–717z (2018).

17. *See* Associated Gas Distribs. v. FERC, 824 F.2d 981, 995 (D.C. Cir. 1987). Moreover, the enormous economies of scale involved in the construction of natural gas pipelines, makes this industry particularly prone to monopolization. *See* United Distribution Cos. v. FERC, 88 F.3d 1105, 1122 (D.C. Cir. 1996).

18. 15 U.S.C. §§ 717c, 717f(c)–(h) (2018). FERC has kept prices low and monopolies at bay by implementing open-access rules, whereby pipelines are required to carry gas on equal terms and cannot discriminate in favor of the gas sold by the pipeline itself. Nat'l Fuel Gas Supply Corp. v. FERC, 468 F.3d 831, 833 (D.C. Cir. 2006).

19. Alexandra B. Klass & Danielle Meinhardt, *Transporting Oil and Gas: U.S. Infrastructure Challenges*, 100 IOWA L. REV. 947, 994–99 (2015).

20. *Id.*

21. 15 U.S.C. § 717f(h) (2018).

22. *Id.* §§ 717f(c)(1)(A), 717(f)(e).

23. Certification of New Interstate Natural Gas Pipeline Facilities, 88 FERC ¶ 61,227 (Sept. 15, 1999); *see also* Certification of New Interstate Natural Gas Pipeline Facilities, 92

order may petition for review by the court of appeals for the circuit in which an interstate natural gas pipeline is proposed to be constructed.[25]

The broad powers granted to the federal government, and vested in FERC, have allowed natural gas infrastructure to expand to meet growing energy demand.[26] This growth in infrastructure has allowed natural gas to become the dominant source of energy in the United States, helping to improve the nation's economy and reduce its greenhouse gas emissions.[27]

2. Opportunity for State Intervention

a. Environmental Statutes

In 1988, the Supreme Court held in *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293 (1988), that the NGA preempts state law pertaining to interstate natural gas pipelines, by occupying the field of interstate natural gas rates, sales, and facilities.[28] This ruling established that FERC had near plenary authority over siting and eminent domain for interstate natural gas pipelines.[29] While states

FERC ¶ 61,094 (July 28, 2000). FERC is empowered to attach "reasonable terms and conditions" to the certificate as necessary to protect the public. 15 U.S.C. § 717f(e) (2018).

24. A party is "aggrieved" by an order by FERC if it challenges the order under the National Environmental Policy Act ("NEPA") and asserts an environmental harm. *See* Gunpowder Riverkeeper v. FERC, 807 F.3d 267, 273–74 (D.C. Cir. 2015). A landowner who will be forced to forfeit part of his land, either voluntarily or through eminent domain, is also "aggrieved" and may challenge a Certificate Order. *See* B&J Oil & Gas v. FERC, 353 F.3d 71, 75 (D.C. Cir. 2004); Moreau v. FERC, 982 F.2d 556, 564 n.3 (D.C. Cir. 1993). The aggrieved party can base its challenge on myriad factors, including FERC's NEPA analysis, which, like most other actions taken by the Commission, will be reviewed according to an arbitrary and capricious standard. *See* Sierra Club v. FERC, 867 F.3d 1357, 1367 (D.C. Cir. 2017).

25. 15 U.S.C. § 717r(a)–(b) (2018).

26. *See* Klass & Rossi, *supra* note 3, at 433. The ability to meet growing production was demonstrated from 1950 through the 1980s, when a streamlined federal siting process allowed pipeline companies to quadruple their capacity to meet the growing demand. Klass & Meinhardt, *supra* note 19, at 1007. The same was true when pipeline companies built 14,600 miles of interstate pipeline between 2000 and 2011 to meet the demands created by the advent of hydraulic fracturing. INTERSTATE NAT. GAS ASS'N OF AM. FOUND., NORTH AMERICAN NATURAL GAS MIDSTREAM INFRASTRUCTURE THROUGH 2035: A SECURE ENERGY FUTURE 8–9 (2011); PAUL W. PARFOMAK, CONG. RESEARCH SERV., R43138, INTERSTATE NATURAL GAS PIPELINES: PROCESS AND TIMING OF FERC APPLICATION REVIEW 8 (2015).

27. *See, e.g.*, Muyskens et al., *supra* note 1; Klass & Rossi, *supra* note 3 and accompanying text.

28. *See* Schneidewind v. ANR Pipeline Co., 485 U.S. 293, 306–08 (1988).

29. *Id. See also* Klass & Rossi, *supra* note 3, at 434.

maintained the ability to comment on and participate in the federal process, they were generally not permitted to block a project or dictate its route.[30]

But this ruling, which applied only to state law, did not affect state rights provided by the Clean Water Act ("CWA"), Clean Air Act ("CAA"), or Coastal Zone Management Act ("CZMA"), each of which Congress passed in the 1970s with broad bipartisan support.[31] Along with granting the federal government powers to protect the environment, these statutes provide states the ability to act as a bulwark against a federal government potentially indifferent to environmental concerns.[32] Specifically, the statutes allow states to block federal energy projects that would endanger the quality of their water, air, or coastal zones.[33]

Section 401 of the CWA, for example, requires a state certification permit for any project that is federally operated or requires federal approval, and may result in any discharge into the states' navigable waters.[34] Permits are only granted upon a finding that the proposed project complies with the states' water quality standards.[35] By denying water quality certification, a state can effectively veto construction of any interstate natural gas pipeline that crosses its borders.[36]

The CAA employs a similar approach, providing that new or modified sources of air pollution must obtain both federal and

30. Klass & Rossi, *supra* note 3, at 434.

31. Congress passed all three of these statutes in the 1970s with broad bipartisan support. *See* William L. Andreen, *The Evolution of Water Pollution Control in the United States—State, Local, and Federal Efforts, 1789–1982: Part II*, 22 STAN. ENVTL. L.J. 215, 285–86 (2003) (discussing how the Senate, which passed the CWA by a margin of 74–0, and the House of Representatives ("House"), which passed the CWA by a margin of 366–11, then overrode President Nixon's veto by a vote of 52–12 in the Senate and 247–23 in the House); Arnold W. Reitze, Jr., *A Century of Air Pollution Control Law: What's Worked; What's Failed; What Might Work*, 21 ENVTL. L. 1549, 1590 (1991) (noting that the CAA passed the Senate by a vote of 73–0 and the House by 374–1); H.R. REP. NO. 99-103, at 9 (1985) (noting that the CZMA passed the Senate by a vote of 68–0 and the House by 376–6).

32. *See* Klass & Rossi, *supra* note 3, at 445–46 (arguing that the federalism approach taken in these statutes resulted from a concern at the time that the federal government's energy goals were causing them to engage in, or approve of, energy projects that would compromise environmental protection).

33. *Id.*

34. 33 U.S.C. § 1341(a) (2018).

35. *Id.*

36. *See S.D. Warren Co. v. Me. Bd. of Envtl. Prot.*, 547 U.S. 370, 380 (2006); *see also* CLAUDIA COPELAND, CONG. RESEARCH SERV., 97-488, CLEAN WATER ACT SECTION 401: BACKGROUND AND ISSUES 2–3 (2015).

state air quality permits.[37] States can use this CAA permitting power to thwart the construction of interstate natural gas pipelines by denying permits for the compressor stations that are necessary for the pipelines to function.[38] States have been reluctant to utilize this option[39] though, despite encouragement from natural gas opponents.[40]

Finally, the CZMA requires state certification for projects that require federal permits and are likely to adversely affect state coastal zones.[41] Certification is necessary only from states that participate in the CZMA's voluntary coastal zone management program,[42] and is granted only if the project complies with the state's federally approved coastal zone management plan.[43] Denying this certification is a third avenue through which states can prevent construction of interstate natural gas pipelines,[44] but, as discussed below, not a particularly effective one.

37. JAMES E. MCCARTHY ET AL., CONG. RESEARCH SERV., RL30853, CLEAN AIR ACT: A SUMMARY OF THE ACT AND ITS MAJOR REQUIREMENTS 15 (2011) (detailing how new or modified sources of pollution require state construction permits); *see also* RICHARD K. LATTANZIO, CONG. RESEARCH SERV., R42986, AN OVERVIEW OF AIR QUALITY ISSUES IN NATURAL GAS SYSTEMS 2, 7 (2016) (noting that the EPA has largely delegated day-to-day administration under the CAA, including permitting activities, to the states).

38. *See* Klass & Rossi, *supra* note 3, at 450; *see also* Michael K. Reer, *Bursting the Bubble: Moving Toward "The Common Sense Principle" When Considering Air Aggregation of Oil and Gas Facilities*, 26 VILL. ENVTL. L.J. 61, 68–69 (2015); *see also The Transportation of Natural Gas*, NATURALGAS.ORG (Sept. 20, 2013), http://naturalgas.org/naturalgas/transport/ [https://perma.cc/Q8N9-QQ7K].

39. Klass & Rossi, *supra* note 3, at 451–52.

40. *Id.* at 451.

41. Erin Ryan, *Negotiating Federalism*, 52 B.C. L. REV. 1, 59–60 (2011).

42. 5 FRANK P. GRAD, TREATISE ON ENVIRONMENTAL LAW § 10.04(2)(b) (2016). Coastal zone management programs require development projects to take into account coastal environmental effects. *See* Martin J. LaLonde, *Allocating the Burden of Proof to Effectuate the Preservation and Federalism Goals of the Coastal Zone Management Act*, 92 MICH. L. REV. 438, 438–39 (1993). All 35 coastal and Great Lakes states, with the exception of Alaska, voluntarily participate in the National Coastal Zone Management Program. *Coastal Zone Management Programs*, OFF. FOR COASTAL MGMT., (June 25, 2018), http://coast.noaa.gov/czm/mystate/ [https://perma.cc/P3UK-LRVG].

43. *See* GRAD, *supra* note 42.

44. BRANDON J. MURRILL, CONG. RESEARCH SERV., R44432, PIPELINE TRANSPORTATION OF NATURAL GAS AND CRUDE OIL: FEDERAL AND STATE REGULATORY AUTHORITY 2, 19 (2016).

b. Energy Policy Act of 2005

By 2005, Congress had become less concerned with environmental protection[45] and more concerned with creating a reliable energy system and generating low fuel prices.[46] The Energy Policy Act of 2005 ("EPAct") was meant to respond to these concerns by increasing and diversifying the nation's energy supplies, promoting energy efficiency, and strengthening the interstate transport system.[47] To achieve this goal, EPAct bolstered federal authority over, and minimized state interference with, energy transport infrastructure.[48]

While the statute included a savings clause to protect the state certification provisions in the CWA, CAA, and CZMA,[49] it limited state veto powers under these provisions by making all certification decisions reviewable.[50] State veto powers were most severely weakened under the CZMA,[51] where the Secretary of Commerce was given the power to override any veto that prevented an activity found to be consistent with the objectives of the CZMA or necessary for national security.[52] State veto powers were also weakened, but to a much lesser extent, under the CWA and CAA,[53] where certification denials were made appealable to the United States

45. *See* Aaron M. McCright et al., *Political Polarization on Support for Government Spending on Environmental Protection in the USA, 1974–2012*, 48 SOC. SCI. RES. 251, 251–60 (2014) (describing how environmental issues became polarized in the early 1990s).

46. Klass & Rossi, *supra* note 3, at 452; *see also* Debbie Swanstrom & Meredith M. Jolivert, *DOE Transmission Corridor Designations & FERC Backstop Siting Authority: Has the Energy Policy Act of 2005 Succeeded in Stimulating the Development of New Transmission Facilities?*, 30 ENERGY L.J. 415, 422 (2009) (citing S. REP. NO. 109-78, at 6, 8 (2005); H.R. REP. NO. 109-215, at 171 (2005)); H.R. REP. NO. 109-215, at 169 (2005)) (attributing Congress's concern over the strength of the nation's energy system to the low domestic oil and gas supplies that led to higher fuel prices and greater dependence on foreign oil).

47. Swanstrom & Jolivert, *supra* note 46 (citing S. REP. NO. 109-78, at 2–6, 9 (2005); H.R. REP. NO. 109-215, at 169 (2005)).

48. Klass & Rossi, *supra* note 3, at 452–53.

49. 15 U.S.C. § 717b(d) (2018); Myersville Citizens for a Rural Cmty. v. FERC, 783 F.3d 1301, 1315 (D.C. Cir. 2015).

50. *See* 15 U.S.C. § 717r(d)(1) (2018).

51. *See* Ryan, *supra* note 41, at 61; MURRILL, *supra* note 44, at 19–20.

52. 16 U.S.C. § 1456(c)(1)(B)(iii) (2018).

53. *See infra* Part II.A.

Court of Appeals,[54] and were reviewed under the relatively lenient "arbitrary and capricious" standard.[55]

B. Social Cost of Carbon

Climate change is not currently a concern explicitly accounted for in the construction of interstate natural gas pipelines. However, with the courts considering expanding the use of the SCC to environmental impact statements,[56] change appears to be on the horizon.[57] To determine the potential implications of such a change, it is helpful to know both the history behind, and controversy surrounding, this relatively novel tool.

1. History and Development

The federal government's use of the SCC is the result of a series of executive orders dating back to the Reagan administration, mandating that federal agencies only adopt a regulation upon finding that its benefits justify its costs.[58] Historically, the cost-benefit analyses performed by these agencies did not account for the harmful effects of greenhouse gas emissions.[59] This changed in 2008, when the Ninth Circuit held that the National Highway Traffic Safety Administration ("NHTSA") acted in an arbitrary and capricious manner when it assigned no value to the reduction in carbon emissions as it finalized new fuel economy standards for light-duty trucks.[60] The Court found that while there may be

54. *See* 15 U.S.C. § 717r(d)(1) (2005); MURRILL, *supra* note 44, at 4–5; Islander E. Pipeline Co. v. McCarthy, 525 F.3d 141, 148–49 (2d Cir. 2008) (discussing judicial review amendments).

55. *See* 16 U.S.C. § 1456(c)(3)(A) (2012); 5 U.S.C. § 706(2)(A) (2012).

56. For a description of what an environmental impact statement is, and when it is must be produced, *see infra* notes 125–27.

57. *See infra* notes 128–36.

58. Exec. Order No. 12,291, 46 Fed. Reg. 13,193, § 2(b) (Feb. 17, 1981); Exec. Order No. 12,866, 58 Fed. Reg. 51,735, § 6(a)(3)(C) (Sept. 30, 1993) (revoking Executive Order 12,291, but keeping the cost-benefit analysis requirement for regulatory decisions); Exec. Order No. 13,563, 76 Fed. Reg. 3821, § 1(b) (Jan. 18, 2011) (affirming the requirements of Executive Order 12,866).

59. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-14-663, REGULATORY IMPACT ANALYSIS: DEVELOPMENT OF SOCIAL COST OF CARBON ESTIMATES 5 n.11 (2014) ("According to EPA officials, other regulations at the time [in 2006] did not typically quantify changes in carbon emissions.").

60. Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 538 F.3d 1172, 1199 (9th Cir. 2008) (finding an agency's cost-benefit analysis arbitrary and capricious

uncertainty in the "range of values, the value of carbon emissions reduction is certainly not zero."[61]

This holding effectively required all agencies to consider the SCC when performing a cost-benefit analysis. The SCC is a number, or range of numbers, intended to monetize the damage caused by emitting one metric ton of carbon dioxide into the atmosphere.[62] Initially, agencies developed their own, widely varying, values for this tool.[63] In 2010, however, a uniform range of SCC values was developed by an interagency working group ("IWG") convened by the Obama White House's Office of Management and Council of Economic Advisors.[64] The IWG based its range of SCC values on the estimated worldwide damage climate change would cause to, *inter alia*, property value, health, and agriculture.[65] The calculations included a range of four estimates—which differed based on the applied discount rate—and the central value in the range was adopted.[66] In the most recent valuations, calculated in 2016, the IWG valued the SCC at roughly $42 per ton of CO_2 emitted.[67]

Throughout President Obama's terms, the SCC was used to justify energy efficiency measures, fuel efficiency standards, and

because it "assigned no value to the most significant benefit of more stringent [fuel economy] standards: reduction in carbon emissions.").

61. *Id.* at 1200. The Court's holding was supported by NHTSA's arbitrary decision to include some benefits—reduction in automobile noise and congestions, for example—while excluding the benefits of reducing greenhouse gas emissions. *Id.* at 1201.

62. *See* Steve Weiler, *Will Climate Change Alter FERC's Certification Process for Natural Gas Pipelines?*, NORTH AM. OIL & GAS PIPELINES: WASH. WATCH (July 24, 2018), https://napipelines.com/climate-change-ferc-certification-gas-pipelines/[https://perma.cc/7PXD-AZJ7].

63. *See* Peter Howard & Jason Schwartz, *Think Global: International Reciprocity as Justification for a Global Social Cost of Carbon*, 42 COLUM. J. ENVTL. L. 203, 212 (2017) (discussing how the Department of Energy estimated the SCC to be between $0 to $20, while the NHTSA valued it between $0 to $14).

64. *Id.* at 214.

65. INTERAGENCY WORKING GRP. ON SOC. COST OF GREENHOUSE GASES, TECHNICAL SUPPORT DOCUMENT: TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 2–3 (2016) [hereinafter 2016 TSD].

66. The four values are calculated using a discount rate of 5%, 3%, and 2.5%, assuming average environmental impact, and the last value uses a discount rate of 3% but under a high impact analysis of the 95th percentile. *Id.* at 3–4. At these discount rates, the SCC in 2020 was estimated to be $12, $42, $62, and $123, respectively. *Id.* at 4 tbl.ES-1. The central value, which agencies use in their cost-benefit analyses, is based on a 3% discount. *Id.*

67. *Id.* (estimating that the SCC will be $42 in 2020).

other regulations that had positive environmental impacts.[68] But while the SCC has been widely applied, its valuation has also been widely debated.

2. Points of Contention

Debate over the appropriate value for the SCC centers on three distinct points of contention: (1) the applicable discount rate; (2) the method for estimating future harm; and (3) the use of global, as opposed to national, harm.[69]

Discount rates are applied in a wide variety of contexts to account for the basic economic principle that a dollar today is worth more than a dollar tomorrow.[70] As applied to the SCC, discount rates can be used to determine the amount society is willing to pay today to avoid future costs associated with climate change. The higher the discount rate, the lower the value that is placed on future benefits. The IWG, for example, calculated the SCC to be $12 at a discount rate of 5%, and $62 at a rate of 2.5%.[71] The amount of future harm projected is the same in both scenarios; the change merely represents the amount we are willing to pay today to avoid that future harm.

While the IWG applied discount rates of 2.5%, 3%, and 5%, some have argued that the appropriate rates for the long term damage done by climate change should be closer to 1% or 0%—with some even suggesting that negative rates should apply.[72]

68. *See* JANE A. LEGGETT, CONG. RESEARCH SERV., R44657, FEDERAL CITATIONS TO THE SOCIAL COST OF GREENHOUSE GASES 2–13 (2017) (noting how the SCC has been referenced in 67 final regulatory actions between 2008 and the end of 2016).

69. *See* Daniel A. Farber, *Coping with Uncertainty: Cost-Benefit Analysis, the Precautionary Principle, and Climate Change*, 90 WASH. L. REV. 1659, 1694–95 (2015) (explaining that there is no consensus over what discount rate should be used concerning the costs of climate change); WILLIAM NORDHAUS, THE CLIMATE CASINO: RISK, UNCERTAINTY, AND ECONOMICS FOR A WARMING WORLD 142–43 (2013) (arguing for the need to consider "tipping points"); Frank Ackerman & Elizabeth A. Stanton, *The Social Cost of Carbon*, 53 REAL-WORLD ECON. REV. 129, 138 (2010); Arden Rowell, *Foreign Impacts and Climate Change*, 39 HARV. ENVTL. L. REV. 371, 375 (2015); Howard & Schwartz, *supra* note 63, at 270–84 app. A. These points of contention exist only among those who believe human activity is, at least to some degree, causing global warming. Climate change deniers would contest use of the SCC wholesale.

70. Farber, *supra* note 69, at 1692–93.

71. *See* 2016 TSD, *supra* note 65, at 4 tbl.ES-1.

72. *See, e.g.*, Farber, *supra* note 69, at 1694–95 (questioning the use of market rates across the long spans of time that climate change requires); Laurie Johnson, *New Study (Part I of II): Feds Underestimate Costs of Carbon Pollution, Low-Balling Climate Change's Impact on Our Children and Grandchildren*, NAT. RESOURCES. DEF. COUNCIL (Sept. 17, 2012), http://www.nrdc.org/experts/ben-longstreth/new-study-part-i-ii-feds-underestimate-costs-carbon-pollution-low-

Others have argued that the discount rate should be an "estimate of the average, before-tax rate of return to private capital in the U.S. economy," calculating the rate at approximately 7%.[73] Furthermore, there is disagreement over whether the discount rate should remain constant[74] or decline over time.[75] As illustrated above, any variation in the discount rate, no matter how small, can have an enormous impact on the overall SCC.[76]

The future harms that will result from climate change play a crucial role in valuing the SCC, but an accurate value of these harms is extraordinarily difficult to calculate. The effects of climate change are extremely broad and can include: lost agricultural and labor productivity, property loss from sea-level rise, trade and energy supply disruption, negative public health consequences, ocean acidification, extreme weather events, flooding, wildfires, increased pests and pathogens, water shortages, migration, regional conflicts, and loss of biodiversity and ecosystem services.[77] It is

balling [https://perma.cc/TNS7-8654] (concluding that the only defensible approach is to use a discount rate that approaches zero); Marc Fleurbaey & Stéphane Zuber, *Climate Policies Deserve a Negative Discount Rate*, 13 CHI. J. INT'L L. 565 (2013) (arguing that the uncertainty of future growth and the social welfare objectives involved both justify the use of a negative discount rate in the climate change context).

73. OFFICE OF MGMT. & BUDGET, M-103-21, CIRCULAR A-4: REGULATORY ANALYSIS 33 (2003) (using an "estimate of the average, before-tax rate of return to private capital in the U.S. economy."). *See also, e.g.*, David Kreutzer, *Discounting Climate Costs*, HERITAGE FOUND. (June 16, 2016), http://www.heritage.org/research/reports/2016/06/discounting-climate-costs [https://perma.cc/3TL3-C5AT] (arguing that the discount rate used should reflect the best alternative that an investment of that size could be reasonably expected to generate). This 7% discount rate has ultimately been incorporated into the new SCC under the Trump administration. *See infra* notes 139–44 and accompanying text.

74. *See* KENNETH J. ARROW ET AL., RES. FOR THE FUTURE, HOW SHOULD BENEFITS AND COSTS BE DISCOUNTED IN AN INTERGENERATIONAL CONTEXT? THE VIEWS OF AN EXPERT PANEL (2012) (weighing the benefits of a declining discount rate in the climate change context); Daniel A. Farber, *Gambling over Growth: Economic Uncertainty, Discounting, and Regulatory Policy*, 44 J. LEGAL STUD. S509, S510 (2015) (claiming that it is now consensus that uncertainty about future growth rates requires a declining discount rate); Frank Ackerman & Ian J. Finlayson, *The Economics of Inaction on Climate Change: A Sensitivity Analysis*, 6 CLIMATE POL'Y 509, 514 (2006) (comparing the effects of a declining discount rate to a rate that is constant).

75. Declining discount rates, which are generally used when future growth is uncertain, make the rate used today for a benefit in 50 years higher than the rate used for a benefit in 100 years. *See* Kenneth J. Arrow et al., *Should Governments Use a Declining Discount Rate in Project Analysis*, 8 REV. ENVTL. ECON. & POL'Y 145 (2014).

76. This change in discount rate would change the SCC from $12 to $62. *See* 2016 TSD, *supra* note 65, at 4 tbl.ES-1.

77. *See* INTERAGENCY WORKING GRP. ON SOC. COST OF CARBON, TECHNICAL SUPPORT DOCUMENT: TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT

unclear whether the SCC should account for the possibility of "tipping points," like the melting of ice sheets, and other catastrophic outcomes.[78] It is similarly unclear whether to account for harm that climate change will cause to the basic growth rate of the economy, which, though not considered by the IWG, is widely believed to be significant.[79] Estimating the future damage for any of these areas is exceptionally complex, and the complexity is only compounded by the uncertainty over how much carbon dioxide will ultimately be emitted into the atmosphere.[80]

Lastly, there is contention over whether the SCC should account for global, or merely national, harm. The IWG opted to account for global harm, which the EPA defended by stating that "[e]conomic principles suggest that the full costs to society of emissions should be considered in order to identify the policy that maximizes the net benefits to society, i.e., achieves an efficient outcome."[81] Supporters of this method add that only looking at domestic harm would lead to grossly inadequate climate protection, continually rising temperatures, and significant damages for every nation, including the United States.[82]

ANALYSIS UNDER EXECUTIVE ORDER 12866 (2013); Howard & Schwartz, *supra* note 63, at 270–84 app. A. Critics have observed that the damages from many of these sectors are omitted or poorly qualified by the SCC. PETER HOWARD, INST. FOR POLICY INTEGRITY, OMITTED DAMAGES: WHAT'S MISSING FROM THE SOCIAL COST OF CARBON 5 (2014).

78. *See* Farber, *supra* note 69, at 1696; NORDHAUS, *supra* note 69, at 142–43 (arguing that "tipping points" should be considered in any SCC calculation); Ackerman & Stanton, *supra* note 69, at 138 (noting that the IWG's SCC elides any consideration of catastrophic damages).

79. *See, e.g.*, Frances C. Moore & Delavane B. Diaz, *Temperature Impacts on Economic Growth Warrant Stringent Mitigation Policy*, 5 NATURE CLIMATE CHANGE 127, 127–28 (2015); Marshall Burke et al., *Global Non-Linear Effect of Temperature on Economic Production*, 527 NATURE 235, 238 (2015) (finding that, as a best estimate, climate change will reduce projected global output by 23% in the 21st century).

80. *See* Farber, *supra* note 69, at 1665–67 (describing the uncertainty over how much the climate will ultimately change, and arguing that this uncertainty is due, in part, to the limitations of our current climate models).

81. Regulating Greenhouse Gas Emissions Under the Clean Air Act, 73 Fed. Reg. 44,354, 44,415 (proposed July 30, 2008). This, however, was not the obvious outcome at the time. In 2008, for example, the Department of Energy and the NHTSA incorporated their SCC value into their regulatory cost-benefit analyses, and both agencies considered only national impact when making their calculations. Energy Conservation Program for Commercial and Industrial Equipment: Packaged Terminal Air Conditioner and Packaged Terminal Heat Pump Energy Conservation Standards, 73 Fed. Reg. 58,772, 58,813 n.22 (Oct. 7, 2008) (to be codified at 10 C.F.R. pt. 431); Average Fuel Economy Standards, Passenger Cars and Light Trucks; Model Years 2011–2015, 73 Fed. Reg. 24,352, 24,414 (proposed May 2, 2008).

82. *See* Howard & Schwartz, *supra* note 63, at 221–22.

Proponents of domestic calculations, on the other hand, argue that the mandate of most federal agencies is limited to activities with domestic effects, and should not take into consideration any harm that would be experienced solely within a foreign country.[83]

The IWG ultimately estimated the SCC to be roughly $42.[84] Unsurprisingly, this value has been criticized as both vastly overvalued[85] and undervalued.[86] But despite the acknowledged uncertainty in calculating the SCC, the Seventh Circuit recently affirmed the use of the IWG's SCC in regulatory cost-benefit analyses.[87] Though such use has arguably proven dispositive in only a handful of agency decisions,[88] the SCC is still widely believed to be a critical tool in the fight against climate change.[89]

83. *See* Zero Zone, Inc. v. Dep't of Energy, 832 F.3d 654, 679 (7th Cir. 2016) (where petitioners unsuccessfully argued that agencies should only consider national effects); *see also* Susan E. Dudley et al., *How Much Will Climate Change Rules Benefit Americans?*, FORBES (Feb. 9, 2016, 8:48 AM), http://www.forbes.com/sites/susandudley/2016/02/09/how-much-will-climate-change-rules-benefit-americans/#4c932f4e63ca [https://perma.cc/5YLR-K2BN] (detailing the disadvantages American citizens experience when a global SCC is used, and arguing that while a global SCC has its place in climate change, it may be unfair to subject citizens to such a calculation through the regulatory decisions made by agencies of the federal government).

84. *See* 2016 TSD, *supra* note 65, at 4 tbl.ES-1.

85. *See* Alan Carlin, *A Multidisciplinary, Science-Based Approach to the Economics of Climate Change*, 8 INT'L J. ENVTL. RES. & PUB. HEALTH 985, 1024 (2011) (arguing "that the economic benefits of reducing CO_2 emissions may be about two orders of magnitude less than those previously estimated by most economists"); *At What Cost? Examining the Social Cost of Carbon: Joint Hearing Before the Subcomms. on Env't & Oversight of the H. Comm. on Sci., Space & Tech.*, 115th Cong. 60–62 (2017) (statement of Patrick J. Michaels, Dir., Ctr. for the Study of Sci., Cato Inst.) (finding the appropriate value of the SCC to be approaching zero); Kevin Dayaratna & David Kreutzer, *Unfounded FUND: Yet Another EPA Model Not Ready for the Big Game*, HERITAGE FOUND.: BACKGROUNDER (Apr. 29, 2014), http://www.heritage.org/environment/report/unfounded-fund-yet-another-epa-model-not-ready-the-big-game [https://perma.cc/H72Q-2QRA] (suggesting that the appropriate SCC may be negative, and by so doing, indicating that CO_2 emissions may actually be economically beneficial).

86. *See* Moore & Diaz, *supra* note 79, at 128 (calculating an SCC of $220); Ker Than, *Estimated Social Cost of Climate Change Not Accurate, Stanford Scientists Say*, STAN. NEWS (Jan. 12, 2015), http://news.stanford.edu/2015/01/12/emissions-social-costs-011215/ [https://perma.cc/XY29-LCUF] (estimating the appropriate SCC to be $220); Frank Ackerman & Elizabeth A. Stanton, *Climate Risks and Carbon Prices: Revising the Social Cost of Carbon*, 6 ECON. 1, 2 (2012) (positing that the SCC could be as high as $900 if it accounted for catastrophic outcomes); Chelsea Harvey, *Should the Social Cost of Carbon Be Higher?*, SCI. AM.: CLIMATE (Nov. 22, 2017), http://www.scientificamerican.com/article/should-the-social-cost-of-carbon-be-higher/ [https://perma.cc/6JS6-RGZC] (explaining how many scientists now believe that the SCC under the Obama administration was outdated and undervalued).

87. *See Zero Zone, Inc.*, 832 F.3d at 677 (holding that Congress intended to give the Department of Energy discretion in considering what SCC to apply).

88. *See* Sam Batkins, *By the Numbers: Ending the Social Cost of Carbon*, AM. ACTION F. (Mar. 29, 2017), http://www.americanactionforum.org/insight/numbers-ending-social-cost-

II. TRAGEDY OF THE ANTICOMMONS AND COMMONS: BLOCKED PIPELINES AND A DEVALUED SCC

Section II.A discusses, through an examination of recent Court of Appeals decisions, how state veto power under Section 401 has created a "tragedy of the anticommons," gridlocking construction of interstate natural gas pipelines. It then explains how FERC has attempted to alleviate the gridlock by circumventing state veto power. Section II.B discusses how President Trump's Executive Order has devalued the federal SCC and, by facilitating the "tragedy of the commons," exacerbated climate change. It then outlines the ways in which states have incorporated the SCC into their own energy policy decisions to show the tool's continued viability despite its federal devaluation.

A. Gridlock in Interstate Natural Gas Pipeline Construction

A *tragedy of the anticommons* occurs when rationally acting individuals block the use of a common resource, causing it to be underused.[90] This occurs when several parties have a set of narrow rights to the same resource, and each party has the ability to exclude the other.[91] Tragedy of this sort can be found in, *inter alia*, the biotech industry,[92] the arts,[93] and, pertinently for this Note, the

carbon/ [https://perma.cc/9X33-HJBQ] (listing seven instances when the SCC played a dispositive role in regulatory decisions). *But see* LEGGETT, *supra* note 68 and accompanying text.

89. *See* Michael Greenstone & Cass R. Sunstein, *Donald Trump Should Know: This is What Climate Change Costs Us*, N.Y. TIMES: OPINION (Dec. 15, 2016), http://www.nytimes.com/2016/12/15/opinion/donald-trump-should-know-this-is-what-climate-change-costs-us.html?_r=1 [https://perma.cc/79J9-GQBE] (positing that since climate change regulation would have no quantifiable benefits without valuing limits on carbon emissions, the SCC "can be seen as the linchpin of national climate policy"); Alison Cassady, *Hidden Costs: President Trump's Campaign to Erase the Social Cost of Carbon*, CTR. FOR AM. PROGRESS (Apr. 19, 2017, 9:01 AM), http://www.americanprogress.org/issues/green/reports/2017/04/19/430591/hidden-costs-president-trumps-campaign-erase-social-cost-carbon/ [https://perma.cc/JRD9-MSK2] (arguing that the SCC is beneficial even when it does not tilt the balance of a cost-benefit analysis, because it informs the public of a regulation's true benefits).

90. Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621, 622 (1998) (introducing the term).

91. *Id.*

92. *See* Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCI. 698 (1998) (discussing how the difficulty in obtaining all the necessary patents, from all the different owners, can create gridlock that prevents cures from being created).

construction of interstate natural gas pipelines. Since every state in which the pipeline passes must provide a water quality certificate ("WQC"), every state can unilaterally block any project constructed within its borders.

1. The Second Circuit Gives States Broad Discretion in Vetoing Pipelines

In recent years, states have escalated their use of Section 401, continually denying the WQCs necessary for construction of interstate natural gas pipelines.[94] These denials, per EPAct, may be challenged by civil action, in which case original and exclusive jurisdiction is given to the court of appeals for the circuit in which the pipeline is proposed to be constructed.[95] The Second Circuit has reviewed several of these denials and has shown a general willingness to defer to the judgment of the states.

a. *Islander I* and *II*

In 2002, FERC granted the Islander East Pipeline Company ("Islander") authorization to construct a natural gas pipeline between Connecticut and New York.[96] The project was brought to a halt when the Connecticut Department of Environmental Protection ("CTDEP") refused to grant (1) a certificate indicating that the proposed pipeline was consistent with the state's Coastal Zone Management Plan ("CZMP")[97] pursuant to the CZMA, and (2) a WQC confirming consistency with the state water quality standards, as required by Section 401.[98]

The CTDEP originally issued its denial of the WQC in a six-page letter outlining the project's inconsistencies with the state's water quality standards.[99] On review, the Second Circuit found that this

93. *See* MICHAEL HELLER, THE GRIDLOCK ECONOMY: HOW TOO MUCH OWNERSHIP WRECKS MARKETS, STOPS INNOVATION, AND COSTS LIVES 12–16 (2008) (pointing out the ways in which the development of films and songs are hindered by copyrights).

94. *See infra* notes 96–110 and accompanying text.

95. *See* 15 U.S.C. § 717r(d)(1) (2018); MURRILL, *supra* note 44, at 4–5.

96. Islander East Pipeline Co., 100 FERC ¶ 61,276, at 99 (2002) (finding that the pipeline satisfied the "public convenience and necessity" requirement under the NGA). The proposed pipeline would be approximately 44.8 miles long, of which 22.7 miles would cross the Long Island Sound. Islander E. Pipeline Co. v. Conn. Dep't of Envtl. Prot. (*Islander I*), 482 F.3d 79, 85 (2d Cir. 2006).

97. 16 U.S.C. § 1456(c)(3)(A) (2018).

98. *See Islander I*, 482 F.3d at 86.

99. *Id.* at 87 (citing Islander East Pipeline Co., CTDEP Denial Letter (Feb. 5, 2004)).

cursory letter of denial "did not adequately examine the relevant record evidence, and failed to articulate rational connections between the facts in the record and the bases for its decision."[100] This failure was enough for the Court to void the state's denial as "arbitrary and capricious."[101] Upon remand,[102] CTDEP filed a more detailed denial[103] that met the Court's standards and ultimately quashed construction of the pipeline project.[104] In upholding the state's updated denial, the court gave no consideration to the original denial or the possibility that the state's reasons for preventing construction of the pipelines were merely pretextual. This indicates that a state's decision to deny water quality certification will be given deference so long as it is detailed.

b. *Constitution Pipeline*

Similarly, in 2016, the New York State Department of Environmental Conservation ("NYSDEC"), which has blocked multiple natural gas pipeline projects in recent years,[105] refused to grant a WQC to the Constitution Pipeline Company for a 121-mile

100. *Id.* at 95.

101. *Id.* at 94 (finding that the "arbitrary and capricious" standard under the Administrative Procedure Act could be applied to state agency actions (citing Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 42–43 (1983))); *see also* Islander E. Pipeline Co., LLC v. McCarthy (*Islander II*), 525 F.3d 141, 150–51 (2d Cir. 2008) (noting that "in deciding whether agency action is arbitrary and capricious, a court considers whether the agency relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise" (citing *State Farm*, 463 U.S. at 43)).

102. *Islander I*, 482 F.3d at 83 (remanding the case for further agency review).

103. The findings made and conclusions reached by the CTDEP upon remand were detailed in an 82-page decision. *Islander II*, 525 F.3d at 150.

104. *Id.* at 151.

105. In 2017, NYSDEC denied water quality certification to the NFG Midstream Northern Access Pipeline as well as the Valley Lateral Pipeline. *See* Jamison Cocklin, *NFG's Northern Access Likely Delayed by Two Years Thank to 'Lousy' NY Regulatory Treatment*, NAT. GAS INTELLIGENCE: SHALE DAILY (May 8, 2017), http://www.naturalgasintel.com/articles/110381-nfgs-northern-access-likely-delayed-by-two-years-thanks-to-lousy-ny-regulatory-treatment [https://perma.cc/EYL7-ZS69] (explaining that the NYSDEC denied a WQC for the Midstream Northern Access Pipeline after three years of review by claiming that the project would have a negative impact on the environment); Rob Friedman & Kimberly Ong, *New York State Blocks the Valley Lateral Pipeline!*, NAT. RESOURCES DEF. COUNCIL (Aug. 31, 2017), http://www.nrdc.org/experts/new-york-state-blocks-valley-lateral-pipeline [https://perma.cc/QP98-7P92] (celebrating New York's decision to block the Valley Lateral Pipeline).

pipeline from Pennsylvania.[106] NYSDEC based its denial on Constitution Pipeline's failure to provide the environmental impact information that had been requested.[107]

On appeal to the Second Circuit, Constitution Pipeline contended: (1) NYSDEC had waived its right to rule on the WQC because it failed to issue its decision within a reasonable amount of time as required by Section 401, and (2) even if the denial was timely, it should be vacated as arbitrary and capricious.[108] The Second Circuit refused to enter a judgment on the former issue because it was not within its jurisdiction to treat a delayed action as void.[109] In response to the latter issue, the Court deferred to NYSDEC's expertise in determining the significance of the information that had been requested, and found that the state's denial in the absence of this information did not qualify as "arbitrary and capricious."[110] This decision further supports the notion that the Court is willing to defer to the judgment of the states with respect to water quality determinations.

2. FERC Tries to Facilitate Pipeline Construction

In the past, the federal government has found ways to circumvent state power when that power was being used to hinder construction of interstate natural gas pipelines.[111] It should therefore be unsurprising that FERC, which has a Republican majority,[112] has

106. Constitution Pipeline Co. v. N.Y. State Dep't of Envtl. Conservation, 868 F.3d 87, 90–91 (2d Cir. 2017).

107. *Id.* at 103 (discussing Constitution Pipeline's failure to provide requested information about "possible alternative routes for its proposed pipeline" and the "feasibility of trenchless crossing methods for streams less than 30 feet wide . . .").

108. *See id.* at 98.

109. *Id.* at 99–100 (writing that "[t]he United States Court of Appeals for the District of Columbia shall have original and **exclusive** jurisdiction over any civil action for the review of an **alleged failure to act** by a Federal agency (other than [FERC]) or State administrative agency acting pursuant to Federal law to issue, condition, or deny any permit required under Federal law . . ." (quoting 15 U.S.C. § 717r(d)(1)–(2)) (emphases in original).

110. *See id.* at 101–03 (noting that "where an agency decision is sufficiently supported by even as little as a single cognizable rationale, that rationale, 'by itself, warrants our denial of [a] petition' for review under the arbitrary-and-capricious standard of review" (quoting Islander East Pipeline Co. v. McCarthy, 525 F.3d 141, 158 (2d Cir. 2008))).

111. *See supra* notes 19–20 and accompanying text.

112. *But see* Ellen M. Gilmer, Rod Kuckro & Sam Mintz, *Powelson's Departure Means Fallout for Pipelines, Policies*, E&E NEWS: ENERGYWIRE (July 2, 2018), https://www.eenews.net/stories/1060087469 [https://perma.cc/5VLJ-T8HG] (noting that the Republican majority will soon disappear).

granted a construction permit for the Millennium pipeline[113] despite NYSDEC's decision to deny a WQC.[114] FERC based its decision to grant the permit on its contention that NYSDEC delayed for too long in denying the WQC[115] and waived its authority on the matter by so doing.[116]

It is unclear to what extent this decision portends a new approach to bypassing state veto power, but it has been celebrated by many pro-pipeline entities as a significant turning point in natural gas pipeline construction.[117] To facilitate this move towards construction, pipeline companies have been aggressively lobbying Congress to pass measures that would restrict, if not eviscerate, state veto powers.[118] The degree of success these efforts will yield is uncertain, however, given that Republicans, while generally in favor of natural gas, have traditionally been staunch supporters of states' rights. As will be discussed in Part III, the nebulous future of Section 401 creates an environment ripe for compromise and new, bipartisan legislation.

B. The Social Cost of Carbon in 2018

A *tragedy of the commons* occurs when rationally acting individuals deplete a common resource, rather than preserve the resource

113. The 7.8-mile pipeline is "expected to generate enough electricity to power more than 650,000 homes, while reducing New York electricity costs by more than $400 million per year and reducing greenhouse gas emissions by nearly a half-million tons per year." Millennium Pipeline Co. v. Seggos, 288 F. Supp. 3d 530, 535 (N.D.N.Y. 2017).

114. *See* Robert Walton, *FERC Overrules New York Permit Denial for Millennium Gas Pipeline*, UTILITY DIVE (Sept. 18, 2017), http://www.utilitydive.com/news/ferc-overrules-new-york-permit-denial-for-millennium-gas-pipeline/505099/ [https://perma.cc/FL5T-CDK4].

115. *Id.* (noting that while NYSDEC received Millennium's application in late 2015, it waited until August 2017 to officially deny certification).

116. New York has challenged FERC's decision in the Second Circuit and has sought a preliminary injunction from the Northern District of New York. *See Seggos*, 288 F. Supp. at 536.

117. James Osborne, *Trump Officials Examining States' Authority in Pipeline Delays*, HOUSTON CHRON. (Dec. 9, 2017, 7:10 PM), https://www.houstonchronicle.com/business/article/Trump-officials-examining-states-authority-in-12413291.php [https://perma.cc/NZF5-BUW2]; Scott DiSavino, *Natgas Pipeline Builders Hail U.S. Okay of Blocked New York Project*, REUTERS, Sept. 20, 2017, http://www.reuters.com/article/legal-us-natgas-millennium-ferc/natgas-pipeline-builders-hail-u-s-okay-of-blocked-new-york-project-idUSKCN1BQ2ZK [https://perma.cc/5J8G-VBZV] (discussing how energy traders and natural gas pipeline companies have celebrated FERC's decision and are hopeful that state vetoes will continue to be overridden).

118. *See* Osborne, *supra* note 117.

through coordination with the community.[119] Tragedy of this sort is prone to strike when unrestrained consumption benefits the individual consumer while imposing unjustifiable costs on the community as a whole.[120] This can occur in a myriad of circumstances, resulting in overgrazed common land,[121] overfished seas,[122] or an over-polluted atmosphere.[123] Overconsumption of this sort is best avoided by forcing individuals to bear all costs associated with their actions—otherwise known as internalizing their externalities—so that the only actions worth performing will be those that create a net benefit.[124] This internalization of externalities is precisely the function the SCC was produced to perform.

1. Environmental Impact Statements

Any federal action that significantly affects the quality of the human environment, such as the construction of an interstate natural gas pipeline, requires an Environmental Impact Statement ("EIS").[125] The EIS must include all significant environmental effects associated not only with the proposed action, but with every reasonable alternative to that action.[126] The sufficiency of an EIS may, according to the Administrative Procedure Act, be subject to a citizen's challenge under the National Environmental Policy Act

119. *See* Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243, 1244–45 (1968) (introducing the term).

120. Heller, *supra* note 90, at 676–78.

121. *See* George Cameron Coggins & Margaret Lindeberg-Johnson, *The Law of Public Rangeland Management II: The Commons and the Taylor Act*, 13 ENVTL. L. 1, 31–32 (1982) (recounting the overgrazing that occurred prior to 1934 in the absence of any law regulating federal land use).

122. *See* Joseph Marino IV, Note, *Keeping More Than One Fish in the Sea: Why the Magnuson-Stevens Act Should Be Reauthorized*, 12 U. MASS. L. REV. 200, 209 (2017) (attempting to find the appropriate balance between overfishing and overregulation).

123. *See* Kirsten H. Engel, *Harmonizing Regulatory and Litigation Approaches to Climate Change Mitigation: Incorporating Tradable Emissions Offsets into Common Law Remedies*, 155 U. PA. L. REV. 1563, 1568–69 (2007) (considering ways to solve the tragedy of the commons that has led to climate change).

124. *See* Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 348 (1967) (describing how no harmful or beneficial effect is external to the world, but that these effects are only adequately accounted for if they are internalized by the one causing them).

125. Marsh v. Or. Nat. Res. Council, 490 U.S. 360, 374 (1989); 40 C.F.R. § 1508.27 (2018).

126. 40 C.F.R. § 1502.14 (2018).

("NEPA").[127] No court has ever found an EIS to be insufficient for failing to incorporate the SCC, though such failures are commonplace. But this trend may soon be coming to an end.

A challenge to the sufficiency of an EIS was brought in *Sierra Club v. FERC*, 867 F.3d 1357 (D.C. Cir. 2017), where a series of environmental groups and landowners challenged FERC's decision to approve construction of three pipelines in the southeastern United States, arguing that the environmental impact of the pipelines was never adequately assessed.[128] The Court agreed with petitioners and held that FERC's EIS inexcusably elided discussion of the greenhouse gas emissions that would result from burning the gas that the pipelines would carry.[129] An adequate EIS, the Court held, must provide a "reasonable estimate" of the increase in carbon emissions made possible by the construction of the pipelines (also known as downstream greenhouse gas emissions), or explain why a reasonable estimate could not be made.[130]

The Court then considered whether the SCC should be applied to the downstream greenhouse gas emissions calculated in the EIS.[131] FERC argued in a previous EIS that the SCC should not be considered since several of its components are contested and because it may account for harms that are not "significant" within the meaning of NEPA.[132] Since FERC did not make a similar argument in the relevant EIS, however, the Court withheld judgment on the issue and ordered FERC to determine on remand if, and why, its previous position still holds.[133]

On remand, FERC calculated that the gas transported by the proposed pipelines would result in 8.36 million metric tons of CO_2

127. 5 U.S.C. § 702 (2018) (providing a right of review for any person suffering legal wrong or adversely affected by agency action).

128. Sierra Club v. FERC, 867 F.3d 1357, 1363 (D.C. Cir. 2017).

129. *Id.* at 1374 (determining that the purpose of the EIS, which is "informed decision making" and "informed public comment," would be undermined if downstream greenhouse gas emissions were omitted from the analysis).

130. *Id.* at 1373–75 (asserting that there is no reason why FERC cannot use the data it already has, such as the amount of gas the pipeline would carry per day, to predict downstream greenhouse gas emissions).

131. *Id.*

132. *Id.* at 1375 (referencing EarthReports, Inc. v. FERC, 828 F.3d 949, 956 (D.C. Cir. 2016)).

133. *Id.*

emissions annually,[134] but refused to attribute any discrete environmental effects to these emissions.[135] Additionally, FERC presented three reasons to support its position that the SCC should not be included in an EIS: (1) there is no consensus over the appropriate discount rate that applies to analyses spanning multiple generations; (2) the tool fails to measure actual incremental impacts; and (3) there is no established criteria for identifying the monetized values to be considered significant for NEPA reviews.[136] The Court has not yet determined the adequacy of this reasoning, nor whether the applicability of the SCC is diminished in light of President Trump's Executive Order greatly reducing its value.

2. President Trump's Executive Order

In recent years, President Trump has been an outspoken skeptic of climate change[137] and critical of efforts to minimize emissions.[138] This skepticism likely influenced the President's decision to issue an Executive Order ("Order") in March 2017, rescinding several climate-related rules, guidance documents, and orders from the Obama administration.[139] Section 5 of the Order directs agencies to eschew use of the SCC developed by the IWG under President

134. *See* FED. ENERGY REGULATORY COMM'N, FERC EIS 0279F, SOUTHEAST MARKET PIPELINES PROJECT: FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT 6 (2018) [hereinafter Southeast SEIS 2018].

135. *See id.*; *Will Climate Change Alter FERC's Certification Process for Natural Gas Pipelines?*, NORTH AM. OIL & GAS PIPELINES: WASH. WATCH (July 24, 2018), https://napipelines.com/climate-change-ferc-certification-gas-pipelines/ [https://perma.cc/4Z4H-P2HJ].

136. Southeast SEIS 2018, *supra* note 134, at 8.

137. *See* Ryan Teague Beckwith, *President Trump Won't Say If He Still Thinks Climate Change Is a Hoax. Here's Why*, TIME (Sept. 27, 2017), http://time.com/4959233/donald-trump-climate-change-hoax-question/ [https://perma.cc/43T2-CQLF] (discussing comments President Trump made several years prior to being elected, in which he labels global warming "a total, and very expensive, hoax!"). *But see* Madeleine Sheehan Perkins & Rebecca Harrington, *It's 'An Expensive Hoax'—And Other Things Trump Has Said About Climate Change*, BUSINESS INSIDER (June 3, 2017, 12:43 AM), http://www.businessinsider.com/donald-trump-climate-change-global-warming-beliefs-2017-6 [https://perma.cc/Z2HU-PY63] (discussing how in 2009, Donald Trump signed a full page ad in the New York Times urging President Obama to take action on climate change).

138. *See id.* (providing statements that President Trump has made criticizing the Paris Climate Agreement); *What Is the Clean Power Plan, and How Can Trump Repeal It?*, N.Y. TIMES (Oct. 10, 2017), http://www.nytimes.com/2017/10/10/climate/epa-clean-power-plan.html [https://perma.cc/8UMY-KPET] (discussing President Trump's criticism of the Clean Power Plan and his promises to bring back coal mining jobs).

139. *See* Promoting Energy Independence and Economic Growth, *supra* note 15.

Obama and encourages the agencies to develop their own SCC instead.[140] Specifically, the Order directs agencies to follow the guidance contained in the Office of Management and Budget ("OMB") Circular A-4 of September 2003.[141]

The OMB Circular A-4 provides suggestions for how to calculate the SCC, which differ significantly from the methods the IWG ultimately employed. Unlike the IWG, which applied discount rates of 2.5%, 3%, and 5%,[142] OMB Circular A-4 suggests that federal agencies "provide estimates of net benefits using both 3 percent and 7 percent" discount rates.[143] Furthermore, while the IWG incorporated global effects of climate change into its valuation of the SCC, OMB Circular A-4 dictates that "analysis of economically significant proposed and final regulations from the domestic perspective is required, while analysis from the international perspective is optional."[144] In the end, the guidance of the OMB Circular A-4 has had the effect of lowering the federal SCC from roughly $42,[145] to between $1 and $6 per ton.[146]

This change in the SCC will likely have a tangible impact on efforts to curb climate change. Most significantly, it will minimize the benefits of rules that reduce carbon emissions, making it more difficult for these rules to survive the cost-benefit analyses necessary for promulgation.[147] Additionally, if the courts were to find that

140. *Id.* at 16,095–96 (declaring that the IWG's SCC is "no longer representative of governmental policy").

141. *Id.* at 16,096 (describing how the OMB document was "issued after peer review and public comment and has been widely accepted for more than a decade as embodying the best practices for conducting regulatory cost-benefit analysis").

142. *See* 2016 TSD, *supra* note 65, at 4 tbl.ES-1.

143. OFFICE OF MGMT. & BUDGET, M-03-21, OMB CIRCULAR NO. A-4, REGULATORY ANALYSIS 34 (2003).

144. INTERAGENCY WORKING GRP. ON SOC. COST OF CARBON, TECHNICAL SUPPORT DOCUMENT: SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 17 (2010).

145. *See* 2016 TSD, *supra* note 65 and accompanying text.

146. *See* Harvey, *supra* note 86; Chris Mooney, *New EPA Document Reveals Sharply Lower Estimate of the Cost of Climate Change*, WASH. POST (Oct. 11, 2017) https://www.washingtonpost.com/news/energy-environment/wp/2017/10/11/new-epa-document-reveals-sharply-lower-estimate-of-the-cost-of-climate-change/?utm_term=.8138142e10c2 [https://perma.cc/QA9S-YXYY] (noting that the values applied by the EPA in documents that consider the consequences of scrapping the Clean Power Plan).

147. If the administration chooses to reconsider the Federal Fuel Economy Standards, for example, it would be difficult to justify cutting fuel use without an accurate valuation of the environmental benefits of such cuts. *See* Alison Cassady, *The Federal Government No Longer Acknowledges That Climate Change Has a Cost,* THINKPROGRESS (Mar. 28, 2017), http://thinkprogress.org/social-cost-of-carbon-trump-eo-5c753f0e850/

the SCC must be incorporated in a project's EIS,[148] the undervalued SCC[149] would misrepresent the environmental costs of a project to decision makers and the general public.[150] Such misrepresentations may result in the approval of environmentally harmful projects that would have been blocked had its true costs been known.

3. States Implementing the SCC

The SCC may be drastically undervalued at the federal level, but the tool is not inextricably tethered to its federal valuation. Indeed, the SCC had been affecting state energy policy long before it was ever used federally. By 2008, when federal agencies began incorporating the SCC into their cost-benefit analyses,[151] the State of Minnesota had been utilizing the tool in its own policy decisions for a decade and a half.[152] In recent years, California, Colorado, Illinois, Maine, New York, and Washington have also begun using a SCC to reduce the greenhouse gas emissions produced within their states.[153] The myriad of ways in which these states utilize the tool makes clear its continued viability despite its federal devaluation.

a. Minnesota

The Minnesota Public Utility Commission is statutorily required to consider all externalities, including the environmental costs,

[https://perma.cc/5R57-MAJW] (discussing how the new SCC could threaten future versions of the Fuel Economy Standards as well as regulations for the reduction of methane leaks and emissions for the airline industry).

148. *See supra* Section II.B.1 (in which the D.C. Circuit Court considers whether to require the incorporation of the SCC into an EIS).

149. *See supra* note 86 and accompanying text (referencing arguments that suggest a $220 SCC is appropriate); *supra* note 65 and accompanying text (noting that the IWG found the appropriate SCC to be roughly $42). *But see supra* note 85 and accompanying text (presenting arguments that would assign a near zero, or potentially negative value, to the SCC).

150. *See* Sierra Club v. FERC, 867 F.3d 1357, 1363 (D.C. Cir. 2017).

151. *See* Howard & Schwartz, *supra* note 63, at 212 (describing how agencies began using their own SCCs in 2008).

152. Peter Fairley, *State-Level Planning in the US, Using the Social Cost of Carbon in Energy Decisions,* RAPID SHIFT (Aug. 14, 2017), http://www.rapidshift.net/state-level-planning-in-the-us-using-the-social-cost-of-carbon-in-energy-decisions/ [https://perma.cc/5PBM-D4EV] (noting that Minnesota began using the SCC in 1993).

153. ILIANA PAUL, PETER HOWARD & JASON A. SCHWARTZ, INST. FOR POLICY INTEGRITY, SOCIAL COST OF GREENHOUSE GASES AND STATE POLICY 9–12 (2017).

associated with each method of electricity generation.[154] Minnesota had used its own SCC of $4.50 to account for these environmental costs since 1993, but updated the value in 2014 to match the federal estimates created by the IWG.[155] Since its update, the SCC has effectively promoted cleaner sources of electricity generation within the state.[156]

b. California

The California Air Resources Board ("CARB") is required to consider the SCC in determining which programs—cap and trade, for example, or a carbon tax—would most effectively achieve the state's goal of emissions reduction.[157] While the IWG's SCC has been applied in CARB's evaluations up until this point, California plans to develop and utilize its own methodology for achieving a more accurate value.[158]

c. Colorado

In March 2017, Colorado's Public Utilities Commission ordered the Public Service Company of Colorado to account for the SCC

154. *See* MINN. STAT. § 216B.2422(3) (2016) ("The [Public Utilities] commission shall, to the extent practicable, quantify and establish a range of environmental costs associated with each method of electricity generation. A utility shall use the values established by the commission in conjunction with other external factors, including socioeconomic costs, when evaluating and selecting resource options in all proceedings before the commission, including resource plan and certificate of need proceedings.").

155. *See* PAUL ET AL., *supra* note 153, at 10–11 (noting that Minnesota adopted the federal SCC because an Administrative judge found it to be the most reasonable estimate available). Minnesota modified the IWG valuation by excluding the SCC's 2.5% rate and using a high-end year 2300 damage horizon. *See also* Herman K. Trabish, *Carbon Calculus: More States are Adding Carbon Costs to Utility Planning Guidelines*, UTILITY DIVE (Aug. 31, 2017), http://www.utilitydive.com/news/carbon-calculus-more-states-are-adding-carbon-costs-to-utility-planning-gu/503613/ [https://perma.cc/46CR-KJ8L].

156. In 2014, for example, Minnesota's Public Utility Commission ("PUC") cited use of the SCC in making its decision to approve a solar project over its gas-fired competition, even though the solar project would cost slightly more to build and run. *See* Fairley, *supra* note 152. The SCC was also cited as influencing the PUC's decision to approve Xcel's proposal to shut down the state's largest coal-fired power plant ahead of schedule and replace it with cleaner energy alternatives. *Id.*

157. CAL. AIR RES. BD, CALIFORNIA'S 2017 CLIMATE CHANGE SCOPING PLAN app. E, at i (2017) (evaluating which plan would best achieve a 40% reduction in greenhouse gas emissions by 2030 compared to 1990 levels).

158. CAL. AIR RES. BD, THE 2017 CLIMATE CHANGE SCOPING PLAN UPDATE 61 (2017) ("The State will continue to monitor and engage in discussions related to any updates to U.S. EPA's SC-CO_2 methods and values and initiate its own work to refine a [SCC] method and values for California.").

when considering the costs and potential alternatives for generation resources.[159] This order will make it more difficult to justify construction of coal-burning plants and will make natural gas turbines less competitive against wind, solar, and other clean energy sources of electricity.[160] Colorado currently uses the IWG's general methodology for estimating the SCC but applies different discount rates.[161]

d. Illinois & New York

Illinois and New York both have zero-emissions credit ("ZEC") programs aimed at keeping nuclear power plants running in spite of stiff competition from cheap, but high carbon producing, oil and gas.[162] Under these programs, nuclear generators struggling to stay in business receive credits for each megawatt-hour they produce while giving off zero-emissions.[163] The state then buys these credits and sells them at a price matching the state's SCC to retail electricity suppliers, who are required to purchase these credits in an amount proportional to their customers' share of the total energy consumed in the state.[164] Both states have based their SCC on estimates made by the IWG.[165]

159. In the Matter of the Application of Public Service Company of Colorado for Approval of its 2016 Electric Resource Plan, Colo. Pub. Util. Comm'n, Decision No. C17-0316 (Mar. 23, 2017), at 84.

160. *See* Aldo Svaldi, *Colorado Utility Regulators Are Putting a Dollar Value on Carbon Emissions' Impact and Will Ask Xcel to Account for It*, DENVER POST (May 28, 2017, 12:01 AM), http://www.denverpost.com/2017/05/28/colorado-utility-regulators-carbon-emission-xcel-energy/ [https://perma.cc/B4WD-SLFA].

161. Colorado uses discount rates of 6.78%, 3%, and 0%, as opposed to the IWG rates of 5%, 3%, and 2.5%. *See* Trabish, *supra* note 155.

162. *See* Stephen Joyce, *Nuclear Subsidies Push Seen Spreading to New States*, BLOOMBERG NEWS (July 19, 2017), http://www.bna.com/nuclear-subsidies-push-n73014461986/ [https://perma.cc/SM77-39TR] (outlining the zero-emissions credit policy implemented in New York and Illinois, while discussing the possibility of Connecticut and Ohio adopting similar policies).

163. Coal. for Competitive Elec., Dynegy Inc. v. Zibelman, 272 F. Supp. 3d 554, 585 (S.D.N.Y. 2017); Vill. of Old Mill Creek v. Star, No. 17 CV 1163, 2017 WL 3008289, at *3 (N.D. Ill. July 14, 2017), *aff'd sub nom.* Elec. Power Supply Ass'n v. Star, 904 F.3d 518 (7th Cir. 2018), *reh'g denied* (Oct. 9, 2018).

164. *Zibelman*, 272 F. Supp. 3d at 585; *Star*, 2017 WL 3008289, at *13.

165. *See* Illinois Power Agency Act of 2018, 20 ILL. COMP. STAT. 3855/1-75(d-5)(1)(B)(i) (2018) ("The Social Cost of Carbon is $16.50 per megawatt-hour, which is based on the U.S. Interagency Working Group on Social Cost of Carbon's price in the August 2016 Technical Update using a 3% discount rate, adjusted for inflation for each year of the program."); N.Y. Pub. Serv. Comm'n, Case No. 15-E-0302, Order Adopting a Clean Energy Standard 131, 134

e. Maine

In 2015, Maine implemented a value-of-solar tariff that allows solar energy system owners to get paid for the excess electricity they produce.[166] The SCC is used to quantify the value of the net avoided emissions attributable to distributed solar generation, which is then used to determine the amount of money the solar consumer is paid per kilowatt-hour.[167] Simply put, this program incentivizes the use of clean energy by paying consumers to use solar. The value of the SCC plays a pivotal role in this program, since it directly impacts the amount that solar consumers are paid; the higher the SCC, the greater the incentive to consume solar energy. The Maine Public Utilities Commission uses the IWG's SCC with a "central" 3% discount rate estimate.[168]

f. Washington

In 2014, Washington's Governor issued an Executive Order requiring state agencies to "[e]nsure that the cost-benefit tests for energy-efficiency improvements include full accounting for the external cost of greenhouse gas emissions."[169] In response to these new requirements, and as recommended by the Washington State Energy Office, agencies began incorporating the federal SCC into their decision-making and reporting processes.[170]

(Aug. 1, 2016) (recognizing that the federal SCC is the "best available estimate of the marginal external damage of carbon emissions").

166. *See* H.P. 863, 127th Leg., 1st Reg. Sess. (Me. 2015); Richard L. Revesz & Burcin Unel, *Managing the Future of the Electricity Grid: Distributed Generation and Net Metering*, 41 HARV. ENVTL. L. REV. 43, 69 (2017); BENJAMIN L. NORRIS ET AL., ME. PUB. UTIL. COMM'N, MAINE DISTRIBUTED SOLAR VALUATION STUDY 9 (rev. ed. 2015).

167. Revesz & Unel, *supra* note 166, at 86–87.

168. PAUL ET AL., *supra* note 153, at 10.

169. Wash. Exec. Order 14–04 (Apr. 29, 2014), http://www.governor.wa.gov/sites/default/files/exe_order/eo_14-04.pdf [https://perma.cc/YA7Q-4JSY].

170. BRIAN BONLENDER, WASH. STATE DEP'T OF COMMERCE, SOCIAL COST OF CARBON 2 (2014) (suggesting that agencies apply the federal SCC associated with a 2.5% discount rate when conducting cost-benefit analyses); *see also, e.g.*, KASIA PATORA & SHON KRALEY, WASH. DEP'T OF ECOLOGY, PUB. NO. 16-02-015, FINAL COST-BENEFIT AND LEAST-BURDENSOME ALTERNATIVE ANALYSIS 40 (2016) (where the Department of Ecology outlines its use of the 2010 IWG estimates under a 2.5% discount rate).

III. PROTECTING THE ENVIRONMENT WHILE STRENGTHENING THE ENERGY SYSTEM

Part II outlined the recent events that have stymied the growth of the nation's energy system and eviscerated the usefulness of the federal SCC. This Part will discuss how these two problems can be solved in tandem. Section III.A explains the nuanced problems of interstate natural gas pipeline gridlock and a devalued federal SCC. Section III.B argues that legislation is the proper solution to these problems, and details the general provisions that such legislation should contain. Section III.C addresses potential objections to the proposed legislation, and explains how such legislation could gather enough bipartisan support to pass.

A. Identifying the Relevant Problems

1. Interstate Natural Gas Pipelines

While states purport to block interstate natural gas pipelines as a means of protecting their water quality,[171] there is reason to suspect that a desire to slow climate change is their true, primary motivation.[172] This motivation can be derived from the statements made and actions taken by state officials and the public more generally. For example, Governor Cuomo of New York has publicly discouraged natural gas use,[173] banned fracking throughout the state,[174] and implemented a series of clean energy initiatives to help curb climate change.[175] The Governor's opposition to natural gas has been encouraged, echoed, and celebrated by New York State

171. *See supra* Section II.A.1.

172. *Cf.* Klass & Rossi, *supra* note 3, at 490 (acknowledging that, in many cases, states may veto interstate natural gas pipelines because of their opposition to fossil fuel infrastructure projects in general).

173. *See, e.g.*, ANDREW CUOMO, 2017 STATE OF THE STATE 57–58 (2017) ("[T]he State must double down by investing in the fight against dirty fossil fuels and fracked gas from neighboring states . . . .").

174. *See* Thomas Kaplan, *Citing Health Risks, Cuomo Bans Fracking in New York State*, N.Y. TIMES (Dec. 17, 2014), http://www.nytimes.com/2014/12/18/nyregion/cuomo-to-ban-fracking-in-new-york-state-citing-health-risks.html?_r=0 [https://perma.cc/29UG-5QBT].

175. *See* STATE OF N.Y., REFORMING THE ENERGY VISION (2015), https://www.ny.gov/sites/ny.gov/files/atoms/files/WhitePaperREVMarch2016.pdf [https://perma.cc/5JL2-APSY]; STATE OF N.Y., REFORMING THE ENERGY VISION: CLEAN ENERGY STANDARD (2016), https://static1.squarespace.com/static/576aad8437c5810820465107/t/5b43ab7570a6ad28d506172e/1531161461418/CES-ov-fs-1-v4.pdf [https://perma.cc/XCH6-8A4K].

Assembly members,[176] his constituents,[177] and various environmental groups.[178] These anti-natural gas sentiments and actions have been accompanied by the state's repeated use of Section 401 to block interstate natural gas pipelines.[179] This is not to say that New York and other states are utterly unconcerned about their water quality; but it does reveal a correlation that strongly suggests climate change is, at least to some degree, motivating use of Section 401.[180]

Understanding the states' motivation for blocking these interstate natural gas pipelines is critical to arriving at a solution for

176. *See, e.g.*, Letter from Barbara Lifton et al., Assembly Members, N.Y. State Assembly, to Hon. Andrew M. Cuomo, Governor, State of N.Y. 1 (July 7, 2016), http://www.documentcloud.org/documents/2943157-Fossil-fuel-infrastructure-moratorium-letter.html [https://perma.cc/8K7Q-RFXV] (urging the Governor to "impose a statewide moratorium on granting permits, water quality certifications or other regulatory approvals for transmission pipelines, power generating plants, compressor stations and fossil fuel projects that are environmental hazards and would perpetuate New York's dependence on burning natural gas, coal and oil for energy generation").

177. *See, e.g.*, Karenna Gore, *Stop a Pipeline for Fracked Gas*, N.Y. TIMES: OPINION (Apr. 15, 2016), http://www.nytimes.com/2016/04/16/opinion/stop-a-pipeline-for-fracked-gas.html?_r=0 [https://perma.cc/UFT6-GWTM] (encouraging New York to deny a permit under the CWA for the purpose of curbing climate change); Friedman & Ong, *supra* note 105 (stating that New York's decision to block the Valley Lateral pipeline "over its potential climate impacts is a historic breakthrough in our fight to move New York away from fossil fuels"); Mimi Bluestone, *Gov. Cuomo, Stop This Gas Pipeline: An Important Climate-Change Decision Right in Our Backyard*, N.Y. DAILY NEWS (Sept. 30, 2017, 5:00 AM), http://www.nydailynews.com/opinion/gov-cuomo-stop-gas-pipeline-article-1.3531078 [https://perma.cc/URR3-QQAK] (urging Governor Cuomo to block the Northeast Supply Enhancement Pipeline to "demonstrate his commitment to combatting climate change").

178. Scott Waldman, *Cuomo Administration Rejects Constitution Pipeline*, POLITICO (Apr. 22, 2016, 3:26 PM), http://www.politico.com/states/new-york/albany/story/2016/04/cuomo-administration-rejects-constitution-pipeline-101005 [https://perma.cc/KXX3-E8QP] (quoting Roger Downs, conservation director of the Atlantic Chapter of the Sierra Club, who said that Governor Cuomo's denial of the Constitution Pipeline "represents a turning of the tide, where states across the nation that have been pressured into accepting harmful gas infrastructure projects by the Federal Energy Regulatory Commission may now feel emboldened to push back"); Kimberly Ong, *Gov. Cuomo Blocks Northern Access Pipeline*, NAT. RESOURCES DEF. COUNCIL (Apr. 9, 2017), https://www.nrdc.org/experts/kimberly-ong/gov-cuomo-blocks-northern-access-pipeline [https://perma.cc/RGA8-P48J] (hailing New York's decision to block the Northern Access Pipeline as "a huge victory not just for New Yorkers but for the entire planet").

179. *See supra* note 105 and accompanying text.

180. A "strong correlation" is the most proof that exists for suggesting that states are motivated to block construction of interstate natural gas pipelines, in large part, because of climate change concerns. If there were hard evidence that this was truly a state's motivation, and that they would not have blocked construction of the pipeline for water quality concerns alone, then the courts would strike down their denied certifications as arbitrary and capricious.

this gridlock that is both realistic and effective. In concocting a solution, though, it is also necessary to understand that facilitating natural gas pipeline construction is not necessarily the goal. To be sure, the increased use of Section 401 has created a tragedy of the anticommons,[181] where large quantities of natural gas go unutilized[182] and the nation's energy system remains underdeveloped.[183] But the former phenomenon presents a problem only if it results in the latter. If, for example, the nation's energy system was adequately and cost-effectively strengthened through renewable energy, then unused natural gas would be of no consequence. Thus, the question in addressing the tragedy of the anticommons is not necessarily how to facilitate natural gas use in particular, but how to cost-effectively strengthen the nation's energy system.

2. The SCC

The overarching problem with respect to climate change is that carbon emitters do not bear the full costs associated with their emissions. They are therefore able to benefit personally by emitting carbon to an extent that imposes unjustifiable costs on the rest of society. The SCC could help curb this tragedy of the commons by permitting carbon to be emitted only to an extent that is beneficial to society as a whole. Unfortunately, the usefulness of this tool has been effectively nullified at the federal level by the Executive Order issued by President Trump.[184] As a result, the only realistic way for the tool to retain its intended benefits is through the various configurations that states use in their own energy policies.[185]

181. For background on the tragedy of the anticommons, see *supra* notes 90–93 and accompanying text.

182. *See* INSTIT. FOR ENERGY RESEARCH, *supra* note 12 (detailing the amount of unused gas resulting from state blocked pipeline projects). Notably, however, some could argue that natural gas should not be used at all, and so it is now actually overused, not underused. *See, e.g.*, Bill McKibben, *Global Warming's Terrifying New Chemistry*, THE NATION (Mar. 23, 2016), https://www.thenation.com/article/global-warming-terrifying-new-chemistry/ [https://perma.cc/JNL2-M5UA] ("Coal and oil and natural gas have to be left in the ground. All of them.").

183. *See supra* note 13 and accompanying text.

184. *See supra* Section II.B.2.

185. *See supra* Section II.B.3 (detailing how states have begun incorporating the SCC into their decision-making processes).

B. How Cost-Benefit Analyses Can Serve as a Solution

According to Professor Michael Heller, who coined the term *tragedy of the anticommons*,[186] gridlock can be remedied through "the creation of new markets, cooperation, [or] regulation."[187] This Section considers each of these remedies and explains why legislation is the only solution that can solve both the tragedy of the commons and anticommons. This legislation would allow states to block construction of interstate natural gas pipelines only when a more cost-effect alternative for supplying the energy is available.

1. Potential Remedies

a. Creation of New Markets

The creation of new markets, through growth in renewable energy sources, may eventually obviate the need for natural gas and, as a corollary, natural gas pipelines.[188] Unfortunately, these renewable energy sources are not growing fast enough to accomplish this task within the next two decades.[189] Renewable

186. *See* Heller, *supra* note 90 and accompanying text.

187. *See* HELLER, *supra* note 93, at 21.

188. *See* Adam Vaughan, *Time to Shine: Solar Power is Fastest Growing Source of New Energy*, THE GUARDIAN (Oct. 4, 2017), http://www.theguardian.com/environment/2017/oct/04/solar-power-renewables-international-energy-agency [https://perma.cc/UYL5-LXBL] (noting that solar was the world's fastest-growing energy source in 2016, and that, in the same year, renewable energy accounted for two-thirds of all new power added to the world's energy grids); Quirin Schiermeier, *Solar and Wind Energy Propel Growth in US Renewables*, NATURE (Feb. 14, 2017), http://www.nature.com/news/solar-and-wind-energy-propel-growth-in-us-renewables-1.21472 [https://perma.cc/XRM4-CSMK] (recognizing that the renewable energy capacity in the United States more than tripled between 2008 and 2017); Zachary Shahan, *13 Charts on Solar Panel Cost & Growth Trends*, CLEAN TECHNICA (Sept. 4, 2014), http://cleantechnica.com/2014/09/04/solar-panel-cost-trends-10-charts/ [https://perma.cc/9FGJ-WSTK] (detailing how solar energy use has grown over the past decade as its cost has rapidly decreased).

189. *See* Sarah McFarlane, *Solar Energy Could Dominate Electricity by 2050: IEA*, REUTERS, Sept. 29, 2014, http://uk.reuters.com/article/2014/09/29/us-solar-iea-electricity-idUKKCN0HO11K20140929 [https://perma.cc/D9V8-HKX2] (predicting that solar energy may be the top source of electricity by 2050); Natasha Geiling, *What Will It Take For America To Go 100 Percent Renewable?*, THINKPROGRESS (Jan. 21, 2016, 5:02 PM) http://thinkprogress.org/what-will-it-take-for-america-to-go-100-percent-renewable-c2cf0c622bbf/ [https://perma.cc/DB53-67QD] (discussing Sierra Club's goal of making 100 cities completely committed to clean energy by 2035); Vaclav Smil, *A Global Transition to Renewable Energy Will Take Many Decades*, SCI. AM., Jan. 2014, http://www.scientificamerican.com/article/a-global-transition-to-renewable-energy-will-take-many-decades/ [https://perma.cc/W3UT-KCF8] (arguing clean energy will not take over until well after the middle of the century).

energy may therefore be a long-term solution to climate change, but it is not, at this point, a realistic substitute for natural gas.

b. Cooperation

If state and federal authorities worked together to route pipelines in a manner that would minimize damage to state water quality, states might, it has been argued, be less inclined to exercise their veto power under Section 401.[190] Such cooperation is feasible, in theory, given that both authorities benefit from interstate natural gas pipeline construction: the state benefits from cheaper energy[191] and job generation,[192] while the federal authorities benefit from a strengthened national energy system.[193] But this solution largely ignores the likelihood that states are using Section 401 as a vehicle for executing their climate change policy, not just for safeguarding their water quality.[194] No amount of cooperation between state and federal government will change the fact that burning natural gas will negatively impact the atmosphere.[195] Thus, if states' motivation for blocking the construction of natural gas pipelines is to address climate change, cooperation will do little to facilitate construction.

c. Regulation

Legislation, specifically Section 401, has been the vehicle by which states have gridlocked the construction of interstate natural gas pipelines and hindered the growth of our nation's energy

190. *See* Klass & Rossi, *supra* note 3, at 486–87 (positing that state vetoes will become less frequent if states proactively voice their concerns early in the process, and FERC cooperates with the states to mitigate such concerns).

191. *See* INSTIT. FOR ENERGY RESEARCH, *supra* note 12 (attributing the higher gas prices in the Northeast to the lack of natural gas infrastructure).

192. *See, e.g.*, Robin K. Cooper, *Aspirations for Constitution Pipeline Revived Amid Federal Policy Shift*, ALBANY BUS. REV. (Jan. 26, 2017, 7:50 AM), http://www.bizjournals.com/albany/news/2017/01/26/aspirations-for-consitution-pipeline-revived.html [https://perma.cc/899B-GZ8Y] (discussing how the Constitution Pipeline stood to create 1,300 jobs in the region).

193. *See* AM. SOC'Y OF CIVIL ENG'RS, *supra* note 13 and accompanying text (discussing how the nation's energy system needs to be strengthened).

194. *See* STATE OF N.Y., *supra* note 175 and accompanying text. Although Klass and Rossi acknowledge the possibility that climate change is motivating states to veto interstate natural gas pipelines, they do not incorporate this possibility into their proposed solution, as they posit that cooperation over routing is all that is required. *See* Klass & Rossi, *supra* note 3.

195. *See, e.g.*, Southeast SEIS 2018, *supra* note 134, at 5 tbl.1 (predicting that the Southeast Market Pipelines Project would result in an additional 8.36 million metric tons of CO_2 per year).

system. It is therefore only natural that legislation, if properly structured, could also serve as a solution. After all, Congress could alleviate the gridlock by simply abrogating the application of Section 401 with respect to interstate natural gas pipelines.

Abrogating Section 401, however, would be a cure worse than the disease; for it would eliminate states' ability to act as a bulwark against a federal government indifferent to environmental costs. A more nuanced piece of legislation is necessary if we are to not just strengthen the nation's energy system, but do so in a manner that minimizes costs associated with climate change. The means by which legislation could accomplish these dual aims is outlined in detail below.

2. New Legislation

The proposed legislation would (1) abrogate the need for states to grant WQCs for interstate natural gas pipeline projects, (2) provide states joint authority over pipeline routing, and (3) allow states to prevent pipeline construction by showing there is a more cost-effective means of supplying the energy.

a. Abrogating the WQC requirement

Section 401 was enacted to protect state water quality, not to combat climate change.[196] But, as previously discussed, it appears that states have recently been exercising their veto power for the latter purpose, more so than the former.[197] The best way to ensure that states do not employ Section 401 beyond its intended scope is to carve out an exception whereby a WQC is not required for interstate natural gas pipelines.[198] Without taking this step, it would be difficult, if not impossible, to discern the extent to which

196. *See* Pub. Util. Dist. No. 1. v. Wash. Dep't of Ecology, 511 U.S. 700, 704 (1994) (noting that the CWA was designed to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" with a goal of realizing "water quality which provides for the protection and propagation of fish, shellfish, and wildlife" (citing 33 U.S.C. § 1251(a), (a)(2))); Angus E. Crane, *Who's in Charge Here? An Analysis of the Enforcement of State Water Quality Certification Standards*, 1 WIS. ENVTL. L.J. 89, 92 (1994) (finding that Congress intended for Section 401 to protect the nation's water by channeling states' superior knowledge of their own natural resources).

197. *See supra* notes 171–80 and accompanying text.

198. The legislation would also have to eliminate state veto power under the CZMA and CAA, as states would likely turn to these statutes in the absence of Section 401. *See supra* Section I.A.2 (discussing state powers under the CZMA and CAA).

climate change is influencing a state's decision to deny a WQC for any particular project.

b. Giving the State Routing Authority

Even if Section 401 is discarded with respect to interstate natural gas pipelines, the underlying purpose of the provision could be salvaged with new legislation providing states joint authority over pipeline routing. This authority would allow states to choose the route a pipeline takes within its borders, but would require final approval from the pipeline company. This system would encourage the cooperation necessary to effectuate cost-effective and environmentally friendly pipeline routes.[199]

One concern with this proposition is that states could abuse this power by issuing environmental impact study after environmental impact study to indefinitely delay pipeline construction.[200] Or potentially, states could delay construction by creating overly burdensome routes that would never get approval from the pipeline company. Both of these tactics could be avoided by implementing a provision that reverts routing authority back to the federal government if the states do not develop, and the pipeline company does not approve, a route within three years.[201] With this provision, states will be motivated to develop an adequate route in a timely manner, so as to retain routing authority, and the pipeline company would be motivated to cooperate with the state so that it could approve the route and begin construction at the earliest possible date.

199. *Cf.* Klass & Rossi, *supra* note 3, at 480–83 (suggesting that environmental harm could be minimized if states' views on pipeline routing were seriously considered); Letter from John Ferguson, Chief Permit Adm'r, N.Y. State Dep't of Envtl. Conservation, to Linda Schubring, Envtl. Project Manager, Constitution Pipeline Co. 3 (Apr. 22, 2016), http://www.dec.ny.gov/docs/administration_pdf/constitutionwc42016.pdf [https://perma.cc/H73E-JFMJ] (claiming that its refusal to grant a CWA permit resulted from Constitution's failure to "substantively" analyze "alternative routes that could have avoided or minimized impacts to an extensive group of water resources").

200. Environmental impact studies, generally associated with NEPA, are often used as a means of delaying or killing projects. *See* Bradley C. Karkkainen, *Whither NEPA?*, 12 N.Y.U. ENVTL. L.J. 333, 345 (2004) (noting that EISs, which are often costly and time-consuming to prepare, are a "favorite tool of those seeking to kill or delay projects").

201. A similar provision is included in the CAA, which provides that if states do not develop a state implementation plan within two years, then a federal implementation plan will be promulgated in its stead. 42 U.S.C. § 7410(c) (2018).

Another concern may be that states will be hesitant to exercise routing authority because doing so would likely aggravate those who have their land taken through eminent domain.[202] But if states decide that the political accountability associated with route selection is not worth protecting the state's water quality, then the power to route the pipeline would simply revert back to the federal government—though forfeiting routing authority would seem to confirm that states are not as worried about their water quality as they claim.

c. Cost-Benefit Analysis

To minimize carbon emissions without jeopardizing the reliability of the nation's energy system, a state should be allowed to veto any interstate natural gas pipeline constructed within its territory if a more cost-effective alternative for supplying the energy is available.[203] Determining the most cost-effective means of supplying the energy to a given region requires a cost-benefit analysis for each potential energy source. To account for all costs associated with the project, including the costs imposed through climate change, these analyses must incorporate the SCC.

The burden of conducting these cost-benefit analyses should fall on the states,[204] since they are more likely than FERC or the

202. *Cf.* New York v. United States, 505 U.S. 144, 168–69 (1992) (where the Court acknowledges that state officials may not want to be tasked with enforcing federal decisions, since disgruntled constituents may hold them accountable by voting them out of office).

203. Environmental law often accounts for the availability of alternatives that would have a less adverse environmental impact. *See, e.g.*, 40 C.F.R. § 230.10(a)(2) (2018) (prohibiting discharge of dredge or fill material if there is a "practicable alternative" that would result in less adverse impact on the environment, which is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes"); 40 C.F.R. § 1502.14(a) (2018) (requiring that in creating an EIS, agencies must "[r]igorously explore and objectively evaluate all reasonable alternatives"); 16 U.S.C. § 1536(h)(1)(A)(i)–(ii) (2018) (providing that agencies may be exempt from the requirements of the Endangered Species Act if, *inter alia*, there are not "reasonable and prudent alternatives" and "the benefits of such action clearly outweigh the benefits of alternative courses of action consistent with conserving the species or its critical habitat"). In fact, FERC is meant to consider alternative means of transportation before approving construction of a natural gas pipeline. *See supra* note 23 and accompanying text. While the states would not be required to implement the most cost-effective alternative for supplying energy, it can be assumed that if states' energy needs are not being met then they will take the steps necessary to meet those needs—whether that means increasing the supply or decreasing the demand.

204. It is not abnormal in environmental law, however, for the burden of analysis to be placed on the proponents, rather than opponents, of a project. *See, e.g.*, 39 C.F.R. § 775.8(a)

pipeline companies to be innovative in finding the most cost-effective means of supplying energy. After all, finding a more cost-effective alternative is the only way in which a state will be able to block construction of the pipeline. If FERC or the pipeline company were charged with conducting the analysis, they would have no incentive to think critically and creatively about potential alternatives.

In conducting the cost-benefit analyses, it would not be too difficult to calculate the environmental costs associated with climate change. The SCC would just need to be multiplied by the downstream greenhouse gas emissions included in the project's EIS.[205] To the extent that states believe the federal SCC is undervalued and would not adequately account for the costs of climate change,[206] the states should use their own SCC instead.[207]

For example, if New York wanted to stop construction of a natural gas pipeline that would pass through its borders, it would multiply the project's downstream greenhouse gas emissions by the SCC that it uses in its ZEC program. So, if the pipeline would cause an additional 8.36 million metric tons of CO_2 to be emitted per year,[208] and if New York used an SCC of $43 in its ZEC program,[209] then 43 would be multiplied by 8.36 million to find that the pipeline project would impose roughly $360 million per year in costs associated with climate change. This sum would then be added to all the other costs associated with the project and compared to the project's benefits. If, after completing these calculations for each potential alternative, New York discovers there

(2018) (imposing the requirements of NEPA upon "environmental coordinators, planners, decision makers, and other officials responsible for actions"); 16 U.S.C. § 1536(c) (2018) (requiring a biological assessment from federal agencies engaging in action that may potentially harm endangered species).

205. All indirect effects of agency action, including downstream greenhouse gas emissions resulting from the construction interstate natural gas pipelines, should be quantified and incorporated into the EIS if feasible. Sierra Club v. FERC, 867 F.3d 1357, 1373–75 (D.C. Cir. 2017). It should be noted, however, that this number does not account for the fact that natural gas may be used even if the pipeline is not constructed.

206. *See supra* Section II.B.3.

207. *Id.* (discussing how several states have begun using their own SCC as a means of reducing greenhouse gas emissions within their state).

208. FERC predicted this amount of downstream greenhouse gas emissions would be caused by the Southeast Market Pipelines Project. Southeast SEIS 2018, *supra* note 134, at 5 tbl.1.

209. *See supra* notes 162–65 and accompanying text.

is a more cost-effective way to supply energy to the region, it would then be permitted to block construction of the pipeline.

The importance this solution places on alternative energy sources would not signify a steep departure from present law. In determining whether to grant a certificate of public convenience and necessity, under Section 7 of the NGA, FERC currently considers "the enhancement of competitive transportation alternatives, the possibility of overbuilding, the avoidance of unnecessary disruptions of the environment, and the unneeded exercise of eminent domain."[210] This indicates that FERC should not grant a certificate to a pipeline if there is more cost-efficient means of supplying the energy. This Note's proposal simply allows the states to act as a backstop to FERC, to ensure that interstate natural gas pipelines are only constructed when truly necessary.

C. Further Elaboration and Explanation

The proposed legislation would likely be subject to several additional concerns, including the possibility that states would (1) create an artificially high SCC to tilt any cost-benefit analysis in favor of renewable energy,[211] or (2) perform a subjective analysis to maximize the non-environmental costs associated with natural gas pipelines while minimizing those associated with alternative energy sources. This Section will respond to these objections and also explain why this legislation could gather enough bipartisan support to be enacted.

1. Establishing the Value of the State SCC

By making an artificially high SCC, states can create a landscape where any form of renewable energy is more cost-effective than natural gas pipelines—essentially providing themselves the sort of plenary veto power this proposed legislation aims to eliminate. This problem could be prevented by requiring states to use the same SCC in their cost-benefit analyses as they do in their other energy policy decisions. If New York, for example, wanted to apply an SCC of $200 to its cost-benefit analysis, then it would have to

210. *See supra* notes 22–23 and accompanying text.

211. It could, for example, value the SCC at $1,000. While it is true that it is difficult to say with a high degree of accuracy the valuation that should be given to the SCC, it has not been seriously argued, so far as I can tell, that it should be valued anywhere near $1,000.

show that it used an SCC of $200 in its ZEC program.[212] This would place an exorbitant cost on non-zero emissions electricity suppliers, who are forced to buy ZEC credits at a price equal to the established SCC.[213] It is unlikely that New York would place that sort of financial burden on its electricity generation companies. However, if New York chose to establish an extraordinarily high SCC so as to prevent construction of natural gas pipelines, would this be such a bad thing? Incentivizing states to significantly reduce their emissions may make it more difficult to strengthen the energy system—since it would prevent construction of natural gas pipelines even when the alternative energy sources may be unjustifiably costly—but it would be extremely useful in reducing overall carbon emissions and, in so doing, curbing climate change.

If a pipeline company objects to the SCC a state has applied, it can bring a challenge in the court of appeals, where the state's SCC will be upheld so long as it has been incorporated in a meaningful manner in the state's energy policy. These reviews may present undesirable transaction costs, but these costs would be no higher than those imposed by Section 401 suits.[214]

2. Manipulating the Numbers

While states that wish to block pipeline construction would certainly be incentivized to calculate the cost-benefit analyses in favor of renewable energies, it is unlikely that these states would be able to manipulate the numbers so as to give these sources a significant and unfair advantage. Like all other agency action, the state's cost-benefit analysis would be subject to judicial review under the arbitrary and capricious standard.[215] If significant and unfair advantages were so easily achieved under this standard, then a cost-benefit analysis would be a universally useless tool. Thus, assuming cost-benefit analyses are useful in other agency contexts, there is no reason to suspect such analyses will be futile when conducted by states in the context of interstate natural gas pipelines.

212. *See supra* notes 163–64 and accompanying text (describing the ZEC program).

213. *See supra* text accompanying note 164.

214. *See supra* Section II.A.1 (discussing several suits that revolved around whether a state's veto under Section 401 should be upheld).

215. *See* Islander East Pipeline Co. v. Conn. Dep't of Envtl. Prot. (*Islander I*), 482 F.3d 79, 94 (2d Cir. 2006).

3. Bipartisan Support

While environmental laws were passed with overwhelming support in the 1970s,[216] environmental protection has since become a partisan issue.[217] Passing any environmental legislation in this context has proven extremely difficult,[218] but there is reason to believe that the proposed legislation could garner bipartisan support.

There is great uncertainty over whether states will retain their broad power to restrict pipeline construction under Section 401. FERC has already taken steps to bypass state authority and has indicated that more steps are to come.[219] History suggests that the federal government will have its way, as previous state attempts to block interstate natural gas pipelines have been met by an expansion of federal power.[220] On the other hand, Section 401 vetoes have been generally upheld on appeal,[221] and right-leaning judges—who may have otherwise ruled in favor of pipeline construction—could be hesitant to support the weakening of state rights, which they have traditionally sought to protect. The uncertainty over the future of Section 401 provides reason for natural gas proponents and opponents alike to support the proposed legislation.

Republicans, who generally favor natural gas,[222] would have good reason to seize the opportunity and definitively rid states of their

216. *See supra* note 31 and accompanying text.

217. Jaime Fuller, *Environmental Policy is Partisan. It Wasn't Always.*, WASH. POST (June 2, 2014), http://www.washingtonpost.com/news/the-fix/wp/2014/06/02/support-for-the-clean-air-act-has-changed-a-lot-since-1970/?utm_term=.5ea26d61a25d [https://perma.cc/7KGH-HRAY] (discussing how environmental issues became partisan after Bill Clinton was elected in 1992).

218. *See* Robinson Meyer, *How the U.S. Protects the Environment, From Nixon to Trump*, THE ATLANTIC (Mar. 29, 2017), https://www.theatlantic.com/science/archive/2017/03/how-the-epa-and-us-environmental-law-works-a-civics-guide-pruitt-trump/521001/ [https://perma.cc/2J2Y-FN5N] (noting that since Congress and President Carter passed the Comprehensive Environmental Response, Compensation, and Liability Act in 1980, hardly any environmental legislation has been enacted).

219. *See supra* Section II.A.3 (describing FERC's efforts to override New York's veto).

220. *See* Klass & Rossi, *supra* note 3, at 437–40. Similarly, when states were hindering the expansion of the interstate electric transmission lines, Congress and FERC both responded by creating new ways to bypass state laws that stood in the way. *Id.* at 436–37.

221. *See supra* Section II.A.1.

222. *See* Art Swift, *Americans Split on Support for Fracking in Oil, Natural Gas*, GALLUP NEWS (Mar. 23, 2015), http://news.gallup.com/poll/182075/americans-split-support-fracking-oil-natural-gas.aspx [https://perma.cc/62T2-SWUE] (discussing how Republicans solidly support natural gas and fracking, while Democratic support is low).

current veto power. It is unlikely, after all, that the state veto power provided by this Note's proposed legislation could be used as often or as liberally as the veto power states currently wield. Moreover, if states are solely vetoing these pipelines for water quality purposes, as they purport to be, then the new veto power may not be exercised at all—as states could minimize the harm to their water quality by choosing the most appropriate route for the pipeline, rather than blocking its construction altogether.

Democrats, on the other hand, could see this legislation as an opportunity to retain an avenue for preventing construction of interstate natural gas pipelines, despite a federal government intent on stripping away such power.[223] If states have genuinely been vetoing these pipelines purely due to water quality concerns, then this legislation will provide an opportunity to protect their water quality—through routing authority—while generating jobs[224] and lowering energy prices.[225] If, however, states have been more motivated by climate change than water quality, this legislation will allow them to prevent construction of natural gas pipelines that impose unjustifiably high costs on the climate. Indeed, at least part of this proposal appears to appeal to Democrats, as several Democratic senators have formally requested that FERC begin incorporating the SCC into its natural gas pipeline evaluations.[226]

CONCLUSION

Natural gas pipeline construction has been stymied in recent years by states refusing to grant water quality certification under Section 401 of the Clean Water Act. There is reason to believe that the states are motivated to deny water quality certification to these pipeline projects because of the adverse impact natural gas has on climate change. Under the Trump administration, FERC has taken steps to bypass state certification requirements and facilitate construction of natural gas pipelines. This Note recommends new legislation that would appease the states and the federal

223. *See supra* Section II.A.3 (discussing FERC's efforts to override New York's veto).

224. *See, e.g.*, Cooper, *supra* note 192.

225. *See* INSTIT. FOR ENERGY RESEARCH, *supra* note 12 (attributing the higher gas prices in the Northeast to the lack of natural gas infrastructure).

226. Geof Koss, *Senate Dems Press FERC on Social Cost of Carbon*, E&E NEWS: GREENWIRE (July 27, 2018), https://www.eenews.net/greenwire/2018/07/27/stories/1060091415 [https://perma.cc/EL4L-NL9U].

government by promoting an energy system that is strong, cost-effective, and environmentally friendly. It would do this by allowing states to block construction of natural gas pipelines only upon proving through cost-benefit analyses that a more cost-effective method of supplying energy to the region is available. Since the federal SCC has been made effectively useless by an Executive Order issued by President Trump, this Note suggests that states incorporate their own SCC into these cost-benefit analyses.