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BEYOND THE PIPELINE WARS: REFORMING ENVIRONMENTAL ASSESSMENT OF ENERGY TRANSPORT INFRASTRUCTURE

James W. Coleman*

Abstract

In recent years, the role of transport infrastructure in energy markets has become a flashpoint for legal conflict. On one hand, the world is experiencing an unprecedented buildout of all kinds of energy transport: oil and gas pipelines, liquefied natural gas projects, power transmission, and port facilities for coal and oil. On the other hand, environmental advocates have increasingly insisted that pipelines and other transport projects should not be built if they would encourage fossil fuel production in markets “upstream” and fossil fuel consumption in markets “downstream” of these projects.

Governments have struggled with how to respond. President Obama famously promised to assess the upstream emissions from the Keystone XL pipeline but the resulting analysis was criticized by all sides as confusing and incomplete. In the meantime, most other energy transport facilities, including other oil and gas pipelines, were being approved without any upstream or downstream analysis over the objection of environmental groups. The federal agencies have split between infrastructure approving agencies which are resisting wider reviews and the Environmental Protection Agency, which has demanded them. And the fight has spread to other countries, where the Keystone XL precedent is now frequently cited as a model by opponents of oil and gas pipelines.

This Article makes the counterintuitive case that studying how energy transport projects might affect upstream and downstream markets is unwise. First, the marginal impact of a single energy transport project in ever changing global energy markets is so uncertain that it provides no useful information to the agencies that decide on these projects. Second, to approve or reject a pipeline because it could encourage international energy markets is to assert the power and the authority to control energy markets in other countries—an undiplomatic encroachment on the authority of those countries to balance environmental and economic concerns in regulating their own energy markets.

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I. INTRODUCTION: THE PIPELINE WARS

In March 2008, near the end of President George W. Bush's second term, the United States Department of State issued a presidential permit for a new pipeline that would ship oil from Alberta to Illinois: the Keystone Pipeline. It was a relatively obscure decision—at the time, new pipelines were considered perhaps the most boring part of the energy industry.¹ Nevertheless, it attracted a lawsuit. The Natural Resources Defense Council sued in the United States District Court for the District of Columbia, arguing that the State Department had improperly failed to provide an environmental review of the way that the pipeline would encourage oil use in the United States and oil production in Western Canada.²

The State Department's response to this allegation was simple—it had not considered how the pipeline might lead to increased oil production in Canada because its review was necessarily “limited to the pipeline which is a transportation system.”³ The State Department would not speculate on how the pipeline would impact global energy markets: how it could increase oil production in the “upstream” areas that would supply the pipeline, or how it could increase oil refining and fuel consumption in the “downstream” areas served by the pipeline.⁴ And the State Department noted that it would be especially inappropriate to consider upstream oil production in Canada because that production is “properly the subject of review by appropriate Canadian governmental entities.”⁵

¹ See Lauren Krugel, *What the Keystone Decision Will Mean for Your Portfolio*, GLOBE & MAIL (Mar. 28, 2013), <https://www.theglobeandmail.com/globe-investor/investment-ideas/what-the-keystone-decision-will-mean-for-your-portfolio/article10491680/?service=print> [<https://perma.cc/H5J3-63LJ>] (“Once upon a time pipeline companies were viewed as rather boring investments.”).

² See Nat. Res. Def. Council v. U.S. Dep’t of State, 658 F. Supp. 2d 105, 109 (D.D.C. 2009); First Amended Complaint for Declaratory and Injunctive Relief at 10, Nat. Res. Def. Council v. U.S. Dep’t of State, 658 F. Supp. 2d 105 (D.D.C. 2009) (No. 1:08-cv-01363) (“Refining oil transported by the Pipeline can be expected to produce more greenhouse gases” and encourage “development of Canadian tar sands, which results in increased emissions of greenhouse gases.”).

³ U.S. DEP’T OF STATE, SCOPING SUMMARY FOR THE KEYSTONE PIPELINE PROJECT ENVIRONMENTAL IMPACT STATEMENT 52 (2006), https://energy.gov/sites/prod/files/2015/08/f25/EIS-0410-FEIS-2008-Appendices_A-C.pdf [<https://perma.cc/55ED-VNVH>] (“The [Draft Environmental Impact Statement] addresses the reasonably foreseeable environmental impacts of the construction and operation of the proposed Keystone Pipeline within the United States and is limited to the pipeline which is a transportation system. The scope of the [Environmental Impact Statement] is necessarily limited to the scope of the proposed project and does not extend to the supply of crude oil to the transportation system or the operation of refineries that are supplied by it.”).

⁴ *Id.*

⁵ *Id.* (“Further, as provided in Executive Order 12114, ‘Environmental Effects Abroad of Major Federal Actions,’ Jan. 4, 1979, a federal agency is directed to consider extra-territorial environmental impacts only in limited circumstances not applicable here.”).

In three sentences, the State Department made its position plain: when it reviewed the environmental impact of the pipeline, it would focus on the pipeline itself, on land disturbance, on community impacts, and on the danger of leaks or spills.⁶ It would not try to predict how the pipeline would affect larger energy markets, particularly foreign markets supervised by other countries' regulators.⁷ President Obama's State Department stuck by this decision and successfully defended it in court, convincing the D.C. District Court that the pipeline approval was unreviewable—a determination that the plaintiffs did not appeal.⁸ In these few words, the State Department laid out one side of a debate that, in the following years, would become a focus of policy debates, interagency arguments, trade disputes, protests, and political campaigns across North America.

In September 2008, six months after the original Keystone pipeline received its permit, the same company, TransCanada, filed an application for another pipeline.⁹ The new pipeline's proposed name, Keystone XL, reflects the time—a time when the last thing that a pipeline company worried about was attracting attention.¹⁰

Just one month later, the Natural Resources Defense Council filed its suit against the original Keystone Pipeline approval.¹¹ The central contention of this lawsuit was that the federal government should have considered how the pipeline would increase oil production in Canada.¹² Though its arguments in that case would be rejected by both the Obama administration and the court, they sparked a global

⁶ *Id.*

⁷ *Id.*

⁸ Nat. Res. Def. Council v. U.S. Dep't of State, 658 F. Supp. 2d 105, 109, 111 (D.D.C. 2009) (“[T]o challenge the issuance of a presidential permit, whether by the President himself or by the State Department as the President’s delegee, is to challenge a presidential act, which is not reviewable under the [Administrative Procedure Act].”).

⁹ U.S. DEP’T OF STATE, RECORD OF DECISION AND NATIONAL INTEREST DETERMINATION 8 (2015), <http://www.energylawprof.com/wp-content/uploads/2016/01/KeystoneXL.Record-of-Decision.pdf> [<https://perma.cc/92TK-RUUW>] (“Keystone’s first application for the Keystone XL pipeline was submitted to the Department [of State] on September 19, 2008.”).

¹⁰ Modern oil and gas pipeline proposal names, rather than emphasizing their size or capacity to carry oil and gas, which could attract environmental scrutiny, generally emphasize energy, opening up new markets, or unrelated concepts. In these respective categories, recent proposals include the Energy East and Northeast Energy Direct pipelines, the Northern Gateway and Dakota Access pipelines, and the Sandpiper and Constitution pipelines. Amy Harder, *Protests Slow Pipeline Projects Across U.S., Canada*, WALL ST. J. (Dec. 9, 2014), <https://www.wsj.com/articles/protests-slow-pipeline-projects-across-u-s-canada-1418173235> [<https://perma.cc/4247-M2J6>] (listing oil and gas pipeline proposals that have attracted significant opposition).

¹¹ Nat. Res. Def. Council v. U.S. Dep't of State, 658 F. Supp. 2d 105, 109 (D.D.C. 2009); First Amended Complaint for Declaratory and Injunctive Relief at 10, Nat. Res. Def. Council v. U.S. Dep't of State, 658 F. Supp. 2d 105 (D.D.C. 2009) (No. 1:08-cv-01363).

¹² First Amended Complaint for Declaratory and Injunctive Relief at 10, Nat. Res. Def. Council v. U.S. Dep't of State, 658 F. Supp. 2d 105 (D.D.C. 2009) (No. 1:08-cv-01363).

movement that would eventually lead President Obama to reverse course—first flipping his position on the relevance of foreign emissions, then rejecting the Keystone XL proposal, and finally scrambling the rules of environmental review for energy infrastructure. President Obama would declare that, far from being irrelevant, the impact of the Keystone XL pipeline on Canadian oil production should be a central part of the State Department's analysis: if the pipeline would increase greenhouse gas emissions from oil production, he would reject it.¹³

But even that seemingly clear standard proved deceptive: in the end, the State Department concluded that approving Keystone XL would not increase emissions from oil production but rejected it anyway.¹⁴ The State Department reached this conclusion in 2015 after a seven year review that found the pipeline might even lower emissions because, without it, the oil would just be transported by trains that emit more greenhouse gases than pipelines.¹⁵ Nevertheless, the State Department decided that the pipeline should be rejected because, contrary to its own analysis, the pipeline would be “perceived as enabling further [greenhouse gas] emissions globally.”¹⁶

Despite the delays and contradictions surrounding the State Department's rejection of Keystone XL, an increasingly powerful global movement is taking it as a model, looking to expand it to all state and federal environmental assessments and to export this Keystone XL precedent to other projects and countries. Some of these cases, such as the Dakota Access Pipeline, have attracted widespread and sustained attention. But the movement is much broader, raising challenges to a wide range of

¹³ President Barack Obama, Remarks by the President on Climate Change (June 25, 2013), <http://www.whitehouse.gov/the-press-office/2013/06/25/remarks-president-climate-change> [<http://perma.cc/YZ38-GT3Y>] (stating that Keystone XL would not be approved if it would “significantly exacerbate the problem of carbon pollution.”).

¹⁴ Although American news stories occasionally suggest that there may no longer be a market to support Keystone XL because of lower oil prices and alternative modes of transport, continued growth in oil sands production means there will likely be an economic need for the pipeline for decades to come. See Art Berman, *Keystone Pipeline Is a Risky Bet On Higher Oil Prices*, FORBES (Feb. 3, 2017), <https://www.forbes.com/sites/arthurberman/2017/02/03/the-keystone-xl-pipeline-a-risky-bet-on-higher-oil-prices-and-tight-oil/> [<https://perma.cc/4K7K-KFVM>]; Max Fawcett, *Why Do We Need Keystone XL Anyway?*, GLOBE & MAIL (Jan. 24, 2017), <https://www.theglobeandmail.com/report-on-business/rob-magazine/pipelines-to-billions/article33703463/> [<http://perma.cc/G687-KPT8>]; Dan Healing, *Alberta Oilsands Production Outlook Bright Despite Gloomy Headlines*, CBC NEWS (Mar. 19, 2017), <http://www.cbc.ca/news/canada/calgary/alberta-oilsands-production-bright-outlook-1.4031788> [<http://perma.cc/TN64-DSV8>].

¹⁵ BUREAU OF OCEANS & INT'L. ENVTL. & SCI. AFFAIRS, U.S. DEP'T OF STATE, FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR THE KEYSTONE XL PROJECT: EXECUTIVE SUMMARY ES-34 (2014), <https://keystonepipeline-xl.state.gov/documents/organization/221135.pdf> [<https://perma.cc/DR3T-KH87>] (estimating that rejecting the pipeline lead to higher greenhouse gas emissions than approving it because all the oil would be transported by rail, which requires “28 to 42 percent” more greenhouse gas emissions than pipeline transport).

¹⁶ U.S. DEP'T OF STATE, *supra* note 9, at 29.

energy transport projects across the nation: gas pipelines, coal export terminals, and liquefied natural gas facilities.

Scholars and environmental organizations argue that, from this point forward, all state and federal environmental reviews of new fossil fuel transport projects must consider whether they could increase fuel production upstream of the project or increase fuel consumption downstream of the project.¹⁷ This expanded environmental assessment is often known as a “climate test” because it aims to determine whether pipelines will harm the climate by encouraging fossil fuel use.¹⁸ And sometimes it is simply called “Keystone-ization”¹⁹ or “the Keystone effect”²⁰ on energy transport approvals.

Regardless of its title, politicians and campaigners that are focused on climate change hope to export this expanded form of environmental assessment, foiling fossil fuel transport projects across the globe.²¹ This aim has a certain plausibility—

¹⁷ Michael Burger & Jessica Wentz, *Downstream and Upstream Greenhouse Gas Emissions: The Proper Scope of NEPA Review*, 41 HARV. ENVTL. L. REV. 109, 111 (2017); Ken Ilgunas, *What Obama's Rejection of Keystone Means for the Climate Fight*, TIME (Dec. 1, 2015), <http://time.com/4130621/paris-climate-conference-keystone/> [<https://perma.cc/KP8N-ZHHG>] (“[T]he fight over [Keystone XL] has started a new trend in pipeline opposition. What were once normal and never-before-questioned conveyances of energy are now facing unprecedented levels of scrutiny, ire and resistance.”).

¹⁸ Jeff Tollefson, *Climate Science: A Line in the Sands*, NATURE (Aug. 7, 2013), <http://www.nature.com/news/climate-science-a-line-in-the-sands-1.13515> [<https://perma.cc/BJ5Y-9356>] (quoting the Natural Resource Defense Council's Susan Casey-Lefkowitz's statement that because increasing production necessarily increases emissions, she says, Keystone “fails the president's climate test”).

¹⁹ Bill Loveless, *U.S. Natural Gas Projects Face Keystone-like Resistance*, USA TODAY (May 17, 2015), <http://www.usatoday.com/story/money/business/2015/05/17/loveless-dominion-natural-gas-keystone/27401527/> [<https://perma.cc/TW7F-JBLL>] (quoting America's Natural Gas Alliance President Marty Durbin: “[W]e've seen a change in the debate . . . call it the Keystone-ization of every pipeline project that's out there, that if you can stop one permit, you can stop the development of fossil fuels.”); see also Zahra Hirji, *It's Not Just Dakota Access. Many Other Fossil Fuel Projects Delayed or Canceled, Too*, INSIDE CLIMATE NEWS (Dec. 5, 2016), <https://insideclimatenews.org/news/06052016/fossil-fuel-projects-cancellations-keystone-xl-pipeline-oil-coal-natural-gas-climate-change-activists> [<https://perma.cc/EF6V-T3L5>] (cataloguing projects killed by environmental reviews, including Keystone XL and the Dakota Access pipeline).

²⁰ Elana Schor, *Could Keystone Be America's Last Pipeline?*, POLITICO MAGAZINE (Jan. 10, 2015), <http://www.politico.com/magazine/story/2015/01/keystone-be-americas-last-pipeline-114137> [<https://perma.cc/U27K-GX7X>] (describing how “the Keystone effect” could block pipelines in the United States and Canada). This terminology is ironic, because the Keystone XL process was the exact reverse of the process used for the original *Keystone* pipeline.

²¹ See, e.g., Clare Demerse, *We Should Assess New Pipelines Like the Americans Do*, GLOBE & MAIL (Feb. 25, 2014), <http://www.theglobeandmail.com/opinion/we-should-assess-new-pipelines-like-the-americans-do/article17077926/> [<https://perma.cc/4EJT-VUN7>] (arguing that pipeline review should “consider not just the impact of the pipeline itself, but

after all, the United States' principal environmental assessment law, the National Environmental Policy Act ("NEPA")²² has long been the driving force behind environmental assessment laws across the world, earning its reputation as "the nation's most successful international export in the field of environmental protection law."²³ As a result, the Keystone XL precedent is an increasing risk factor for all companies participating in global energy markets.

Yet despite the global focus on the Keystone XL precedent, it remains totally unclear what, if any, rule it establishes for future environmental assessments in the United States. No company can predict how the United States will now review its energy transport proposals—the government has taken various inconsistent and conflicting approaches, often on the same project. It is not clear whether the government will review the impact of a transport project on upstream markets or downstream markets, or neither, or both. It is not clear how the government can estimate these impacts—a difficulty all too manifest in the review of the Keystone XL project. And even if the government could find reliable ways to estimate the effect of transport projects on global energy markets, it is not clear how the government would use these estimates to make a decision.

The federal agencies are just as divided as the public on the propriety of a "climate test" for energy transport projects. The Environmental Protection Agency ("EPA") has favored expanded environmental review.²⁴ And to this point, scholars have largely agreed.²⁵ Meanwhile, the agencies actually responsible for approving

also the impact of the product that flows through it" following the example of "President Barack Obama [who] has committed to make his decision on TransCanada's Keystone XL pipeline project based on its impact on the climate.").

²² National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–47 (2012).

²³ Richard Lazarus, *The National Environmental Policy Act in the U.S. Supreme Court: A Reappraisal and a Peek Behind the Curtains*, 100 GEO. L.J. 1507, 1510 (2012) ("As many as half of the states have . . . enacted their own NEPA programs modeled upon the federal statute. And approximately 160 other countries have done the same, making NEPA the nation's most successful international export in the field of environmental protection law."); see also *id.* at 1520–21, 1520 n.75 (describing the complexities in counting how many states and countries have comparable environmental assessment laws and noting that some of these state and foreign laws are more stringent and wide ranging than NEPA); Bradley C. Karkainen, *Toward a Smarter NEPA: Monitoring and Managing Government's Environmental Performance*, 102 COLUM. L. REV. 903, 905 (2002) ("Whatever its faults, real or imagined, NEPA is without question the most widely emulated of the major U.S. environmental laws.").

²⁴ See *infra* text accompanying notes 63–64.

²⁵ See, e.g., Aaron Flyer, *FERC Compliance Under NEPA: FERC's Obligation to Fully Evaluate Upstream and Downstream Environmental Impacts Associated with Siting Natural Gas Pipelines and Liquefied Natural Gas Terminals*, 27 GEO. INT'L ENVTL. L. REV. 301, 304 (2015) ("NEPA review must consider the impacts of increased natural gas use above and beyond the physical impacts of a specific pipeline or terminal."); Amy L. Stein, *Climate Change Under NEPA: Avoiding cursory consideration of Greenhouse Gases*, 81 U. COLO.

infrastructure, such as the Federal Energy Regulatory Commission ("FERC") and the Army Corps of Engineers have generally opposed such broader reviews.²⁶

This uncertainty could not come at a worse moment: the world energy system is currently in the midst of three transitions that are creating an unprecedented demand for new and reliable energy transport infrastructure. First, a transition from conventional to unconventional sources of crude oil and natural gas is combining with developing world growth to scramble established oil and gas trade routes, leading to a new buildout of pipelines and port facilities designed to bring oil and gas from new production sources in North America to growing demand centers in Asia.²⁷ Second, to reduce fossil fuel use and move to renewable power, the United States will need to rapidly build power transmission from the deserts and prairies where solar power and wind power are often sited to the metropolitan centers of electricity demand.²⁸ Third, to reduce the use of coal and support the transition to renewable power, the United States will need a massive build out of pipelines to transport natural gas to power plants that can replace coal and ramp up and down to accommodate the variable output of solar and wind.²⁹

This Article proceeds in four parts. Part II considers the existing law on environmental assessments: court decisions under the National Environmental Policy Act and the Council on Environmental Quality's sparse guidance on assessing greenhouse gas emissions related to federal actions. It shows that neither source provides a clear answer on whether review of pipelines, or other energy transport infrastructure, should go beyond the pipeline to examine how more transport will impact upstream energy production and downstream energy demand.

Part III explains the U.S. government's inconsistent practices and pronouncements on considering upstream and downstream emissions for pipelines, port facilities, and power transmission. It shows how this confusion has spread to other countries seeking to follow the U.S. model. It examines the few environmental assessments, both in the United States and abroad, that have attempted to do a wider assessment of upstream and downstream emissions, showing how they failed to provide useful information to regulators. It demonstrates that, even in theory, it is nearly impossible to draw conclusions about how a single energy transport project will affect global energy markets. In doing so, it surveys the market changes that are fueling the drive for new energy transport infrastructure.

Part IV shows how upstream and downstream reviews of energy transport projects in the United States tend to encroach on the authority of its energy trading partners to strike a balance between environmental and economic concerns in their own energy markets. If a U.S. regulator rejects a pipeline, port facility, or transmission line in order to prevent development of energy markets in another country, it

L. REV. 473, 534 (2010) ("Agencies should be required to quantify the projected GHG emissions for each of the proposed alternatives in an EA and use a numerical threshold to determine whether the GHG emissions are significant.").

²⁶ See *infra* text accompanying notes 62–64, 159, 160.

²⁷ See *infra* text accompanying notes 119–130.

²⁸ See *infra* text accompanying notes 172–176.

²⁹ See *infra* text accompanying notes 128–129.

asserts that it has both the power and the authority to control energy markets in that foreign country. This assertion is a recipe for conflict in energy trade and it is already becoming apparent that countries, advocating for their industries, will take every opportunity to cloak protectionist and mercantilist policies in the guise of environmental assessment. Even when energy markets are purely domestic, the same dynamic may strain the balance of power in energy federalism: if the federal government begins using reviews of interstate infrastructure to control upstream and downstream energy markets that have traditionally been regulated by the states, it will engender opposition to federal environmental review of these projects.

Part V considers how the law should be adjusted to ensure that environmental assessments focus on areas where they will be helpful to regulators and avoid provoking energy trade conflict. Courts and agencies should make plain that the upstream and downstream market impacts of energy transport projects are generally not impacts that must be assessed in environmental reviews. They should also make clear that environmental assessments will not turn on how a project will impact energy markets in another jurisdiction. If necessary, Congress should mandate these principles by amendment of the National Environmental Policy Act. This Part concludes by discussing some of the rare instances where a review of the upstream or downstream impact of a transport project might be appropriate, suggesting how courts and agencies can recognize and provide for these exceptions.

II. THE NATIONAL ENVIRONMENTAL POLICY ACT AND THE COUNCIL ON ENVIRONMENTAL QUALITY GUIDANCE

There is no shortage of case law or commentary on the National Environmental Policy Act, but unfortunately none of it makes clear whether environmental review of an energy transport project should include a review of how more transport would affect upstream and downstream markets. The National Environmental Policy Act itself only requires that when the federal government takes “major Federal actions significantly affecting the quality of the human environment” it must include “a detailed statement” on “the environmental impact of the proposed action” and “any adverse environmental effects” that it will entail.³⁰ This detailed statement is known

³⁰ 42 U.S.C. § 4332(C) (2012).

as an “environmental impact statement”³¹ and must also describe “alternatives to the proposed action.”³²

Since NEPA was enacted in 1970, this seemingly simple command has accreted myriad complications and ramifications through interpretation by the courts and the U.S. Council on Environmental Quality, which is authorized by Congress to consult with federal agencies on interpreting NEPA.³³ And the Council on Environmental Quality has recently finalized guidance for consideration of a project’s climate change impacts.³⁴ But neither this old case law nor this new guidance, since withdrawn, provides any clear rule about whether upstream and downstream emissions should be considered in environmental reviews of energy transport infrastructure.

The notoriously convoluted case law governing environmental reviews under the National Environmental Policy Act does not provide a clear answer on the appropriate scope of review for energy transport projects.³⁵ Under Supreme Court precedents and longstanding Council on Environmental Quality guidance, environmental reviews under NEPA must consider indirect impacts of a federally approved action when those impacts are “reasonably foreseeable.”³⁶ The Supreme Court has identified two main factors to determine whether an indirect effect is reasonably foreseeable. First, the courts must use the analogy of “proximate cause from tort

³¹ If a federal agency action does not have a significant impact on the environment, the agency may issue an “environmental assessment” including a Finding of No Significant Impact. See 40 C.F.R. §§ 1501.4(e), 1508.9(a), 1508.13 (2012) (describing an environmental assessment as a “concise public document”). Of course, when the agency determines its action has no significant impact, it does not issue an environmental impact statement. See *Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, 757–58 (2004) (“If . . . an agency determines that an [environmental impact statement] is not required . . . it must issue a ‘finding of no significant impact’ (FONSI), which briefly presents the reasons why the proposed agency action will not have a significant impact on the human environment.”).

³² 42 U.S.C. § 4332(C)(iii) (2012).

³³ National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 853 (1970) (codified as amended at 42 U.S.C. § 4332(B) (2012)).

³⁴ Memorandum from Christina Goldfuss, U.S. Council on Env’tl. Quality, to the Heads of Federal Departments and Agencies 1–6 (Aug. 1, 2016), https://energy.gov/sites/prod/files/2016/08/f33/nepa_final_ghg_guidance.pdf [<https://perma.cc/E7P8-PJTX>].

³⁵ NEPA has been the foundation for so much case law that it is sometimes called the “Magna Carta” of environmental law. Arthur W. Murphy, *The National Environmental Policy Act and the Licensing Process: Environmentalist Magna Carta or Agency Coup De Grace?*, 72 COLUM. L. REV. 963, 963 (1972). And this complex case law is often inconsistent as well. See Todd S. Aagard, *A Functional Approach to Risks and Uncertainties Under NEPA*, 1 MICH. J. ENVTL. & ADMIN. L. 87, 100–02 (2012) (describing “overall incoherence in how courts are confronting issues of risk and uncertainty in NEPA cases”).

³⁶ *Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, 763–64 (2004).

law,”³⁷ noting that “proximate cause analysis turns on policy considerations and considerations of the ‘legal responsibility’ of actors.”³⁸ Second, the courts must consider whether “any new potential information” from considering these indirect effects would be “useful[] . . . to the decisionmaking process.”³⁹ At first blush, this standard provides little concrete guidance in the case of expanded energy transport reviews, because the central point of contention between proponents and opponents of wider pipeline reviews is whether considering upstream and downstream impacts provides useful information or is wise as a matter of policy.⁴⁰

The decisions of lower courts have not provided any clearer rule. The most relevant cases for energy transport projects are three recent District of Columbia Circuit holdings. Two hold that FERC and the Department of Energy are not obliged to consider upstream gas production and downstream consumption when they approve liquefied natural gas facilities and exports.⁴¹ The third held that FERC is required to consider the downstream impact of a natural gas pipeline on gas consumption.⁴² This most recent opinion, issued by a different panel less than a week after the most recent liquefied natural gas decision, did not explain how the disparate decisions were consistent.⁴³ Otherwise, the best case for advocates of expanded environmental reviews for pipelines and energy transport is a decision of the United States Court of Appeals for the Eighth Circuit, which held that construction of a railroad line required at least some consideration of increased coal use that the line

³⁷ *Id.* at 767. *See also* *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) (“The statutory requirement that a federal agency contemplating a major action prepares such an environmental impact statement . . . ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts.”); *Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983) (explaining that a reasonably close causal relationship is similar to the proximate cause doctrine in tort law).

³⁸ *Pub. Citizen*, 541 U.S. at 767 (quoting *W. KEETON ET AL., PROSSER AND KEETON ON LAW OF TORTS* 264, 274–75 (5th ed. 1984)).

³⁹ *Id.*

⁴⁰ *See infra* Parts III, IV.

⁴¹ *Sierra Club v. Fed. Energy Regulatory Comm’n*, 827 F.3d 36, 46–49 (D.C. Cir. 2016) (holding that no consideration of upstream production and downstream combustion was required because agencies other than FERC had the authority to prevent those results); *Sierra Club v. U.S. Dept. of Energy*, Case No. 15-1489 (D.C. Cir. Aug. 15, 2017) [https://www.cadc.uscourts.gov/internet/opinions.nsf/02747B91566F24638525817D004EC42/\\$file/15-1489-1688746.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/02747B91566F24638525817D004EC42/$file/15-1489-1688746.pdf) [<https://perma.cc/HHJ6-TRA7>].

⁴² *Sierra Club v. U.S. Fed. Energy. Reg. Comm’n*, Case No. 16-1329 (D.C. Cir. Aug. 22, 2017), https://www.eenews.net/assets/2017/08/22/document_gw_01.pdf [<https://perma.cc/B4QQ-8SYD>].

⁴³ *Id.*

would enable.⁴⁴ Other circuits, however, have resisted an expansive reading of this decision.⁴⁵

Given that the case law offered no clear answer, many hoped that the Council on Environmental Quality would issue guidance that would make plain the rules for reviewing energy transport infrastructure.⁴⁶ And in August 2016, the Council on Environmental Quality did finalize guidance.⁴⁷ During the development of this guidance, the most controversial (and informative) statement had been a suggestion in draft guidance that environmental reviews of energy projects should consider upstream and downstream impacts that have a “reasonably close causal relationship to

⁴⁴ *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 548–50 (8th Cir. 2003). Railroads, like highways, arguably present a stronger case for considering how they will enable development because the federal government often builds or subsidizes these forms of transport with the primary goal of inducing economic activity by connecting outlying areas to interstate commerce. BARRY B. LEPATNER, *TOO BIG TO FALL: AMERICA’S FAILING INFRASTRUCTURE AND THE WAY FORWARD* xix, 50–51 (2010) (discussing the transcontinental railroad and the Federal Highway Administration); Robert Cervero, *Road Expansion, Urban Growth, and Induced Travel: A Path Analysis*, 69 J. AM. PLAN. ASS’N. 145, 156 (2003) (discussing how improved road transportation spurs economic activity along travel corridors).

⁴⁵ *Sierra Club*, 827 F.3d at 48 (“Even assuming the correctness of a decision that does not bind this circuit, this case looks nothing like *Mid States*.”); *Habitat Educ. Ctr. v. U.S. Forest Serv.*, 609 F.3d 897, 902 (7th Cir. 2010) (“To the extent plaintiffs are arguing that the Eighth Circuit’s decision in *Mid States* is in tension with [other circuits’] consensus” “that an agency decision may not be reversed for failure to mention a project not capable of meaningful discussion . . . we reject their reading of that decision.”).

A common NEPA dispute that raises similar issues to indirect effects analysis is the question whether a federal decision on one segment of a project means that the entire project must undergo an environmental assessment. This doctrine is often referred to as the “small federal handle” doctrine because it says a small federal action may require environmental review of a large private project. Some decisions have required review of such projects. See *Sierra Club v. Marsh*, 769 F.2d 868, 881–82 (1st Cir. 1985) (holding that the Army Corps of Engineers must consider environmental impact of the industrial park enabled by the causeway that it permitted). And others have not. See *Save the Bay, Inc. v. U.S. Corps of Eng’rs*, 610 F.2d 322, 327 (5th Cir. 1980) (holding there is no need to consider manufacturing facility that required federal approval of an outfall pipeline); *Winnebago Tribe of Nebraska v. Ray*, 621 F.2d 269, 272 (8th Cir. 1980) (holding that approval of water crossings did not require review of entire transmission line).

⁴⁶ Michael Burger & Jessica Wentz, *CEQ Issues Final Guidance on Climate Change and NEPA with Two Key Changes from 2014 Draft*, COLUM. CLIMATE L. BLOG (Aug. 3, 2016), <http://blogs.law.columbia.edu/climatechange/2016/08/03/ceq-issues-final-guidance-on-climate-change-and-nepa-with-two-key-changes-from-2014-draft/> [<https://perma.cc/329K-B9EC>] (noting that this “much-anticipated” guidance “comes after a lengthy process of public engagement and interagency consultation”).

⁴⁷ Memorandum from Christina Goldfuss, *supra* note 34, at 1–34.

the [federal] action.”⁴⁸ That standard was still open to interpretation because a key dispute about “climate tests” is whether upstream and downstream impacts may be causally linked to energy transport infrastructure. In other words, the draft guidance left open the question how often upstream and downstream impacts bear a “reasonably close causal relationship” to an energy transport project. Nevertheless, some observers believed that this reference to upstream and downstream emissions might encourage federal agencies to broaden their environmental reviews of energy transport projects.⁴⁹

But even this wishy washy statement proved too controversial for a federal government riven by internal dissension on the idea of a climate test.⁵⁰ One of the few changes to the draft guidance was removing this reference to upstream and downstream emissions.⁵¹ In doing so, the Council on Environmental Quality (“CEQ”)

⁴⁸ Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews, 79 Fed. Reg. 77,802 (Dec. 24, 2014) (“In addition, emissions from activities that have a reasonably close causal relationship to the Federal action, such as those that may occur as a predicate for the agency action (often referred to as upstream emissions) and as a consequence of the agency action (often referred to as downstream emissions) should be accounted for in the NEPA analysis.”).

⁴⁹ Hannah Northey, *White House NEPA Guidance Could Trigger Change at FERC*, E&E NEWS (Dec. 19, 2014), <http://www.eenews.net/stories/1060010881> [<https://perma.cc/RX4E-W7KK>].

⁵⁰ See, e.g., Letter from U.S. Envtl. Prot. Agency to U.S. Fed. Energy Regulatory Comm’n at 2 (Oct. 11, 2016) (on file with author) (FERC’s environmental review “perpetuates the significant emission” by not considering downstream impact and so “[w]e . . . request a headquarters level meeting with us to seek a definitive resolution to this matter before you [approve the pipelines] and so that you do not continue to take this approach in additional NEPA documents”).

⁵¹ Predictably, observers placed widely varying interpretations on this change. See *Advocates Reject Industry Claims NEPA Rulings Curtail CEQ’s Climate Guide*, INSIDE EPA/CLIMATE (July 26, 2016), <https://insideepaclimate.com/share/180688?s=07272016> [<https://perma.cc/62ND-PJFW>] (noting that recent appellate rulings have held that “the [DOE], not the [FERC] is still responsible for assessing the upstream and downstream climate impacts of LNG projects”). Compare Howard L. Nelson & Francesca Ciliberti-Ayres, *CEQ Issues Measured Final Guidance for Federal Agencies in their Consideration of GHG Emissions in NEPA Reviews*, GREENBERG TRAURIG LLP (Aug. 4, 2016), <http://www.gtlaw.com/News-Events/Publications/Alerts/197007/CEQ-Issues-Measured-Final-Guidance-for-Federal-Agencies-in-their-Consideration-of-GHG-Emissions-in-NEPA-Reviews> [<https://perma.cc/E9AC-YE9E>] (“Perhaps most notably, the CEQ’s Final Guidance removed the most controversial aspect of the Draft Guidance which was its explicit instruction that agencies’ NEPA analyses take into account GHG emissions from *upstream* and *downstream* sources.”) with Burger & Wentz, *supra* note 46 (“[R]emoval of this language from the final guidance does not mean that agencies can simply ignore all ‘upstream’ or ‘downstream’ emissions in their NEPA reviews” and, in fact, supports these authors’ argument that “upstream and downstream emissions do fall within the scope of the NEPA review for fossil fuel-related projects.”).

granted the request of the Federal Energy Regulatory Commission, which approves natural gas pipelines and liquefaction terminals, and had asked that the language be removed.⁵² In its place, the guidance simply stated that “agencies should consider and disclose the reasonably foreseeable direct and indirect emissions when analyzing the direct and indirect effects of the proposed action.”⁵³ That is a mere restatement of existing Council on Environmental Quality guidance, which mandates consideration of indirect impacts when they are “reasonably foreseeable.”⁵⁴ In the end, even this unhelpful guidance was withdrawn by the new administration.⁵⁵ Thus, in the end, neither the case law nor the CEQ guidance provides any clear answers on whether federal environmental reviews should consider upstream and downstream emissions from pipelines and other energy transport projects.

III. THE MIXED AND INCONSISTENT PRACTICE OF UPSTREAM AND DOWNSTREAM ASSESSMENTS OF ENERGY TRANSPORT PROJECTS

If pipeline projects and pipeline approvals themselves were once obscure, the scope of environmental assessments for pipelines would seem like the archetypal arcana.⁵⁶ But the media firestorm surrounding Keystone XL made it a stand in for broader disputes about energy and climate.⁵⁷ So perhaps it is not shocking that, in 2013, when President Obama laid out his new climate plan at a highly publicized

⁵² Letter from Ann F. Miles, U.S. Fed. Energy Regulatory Comm’n, to Horst Greczmiel, Council on Env’tl. Quality 1–2 (Feb. 23, 2015), https://www.eenews.net/assets/2017/02/23/document_gw_10.pdf [<https://perma.cc/48UZ-YLNC>] (requesting “that the Revised Draft Guidance not direct agencies to expand their NEPA analyses to consider the impacts of wide-ranging upstream and downstream activities that are neither causally related to the proposed action nor reasonably foreseeable”).

⁵³ Memorandum from Christina Goldfuss, *supra* note 34, at 16. It also suggested that “connected actions” should only be considered “subject to reasonable limits based on feasibility and practicality” of assessing those emissions, again without providing examples of what kind of reviews should be considered reasonable or practical. *Id.* at 13.

⁵⁴ 40 C.F.R. § 1508.8(b) (mandating consideration of “[i]ndirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable”).

⁵⁵ Withdrawal of Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, 82 Fed. Reg. 16576 (Apr. 5, 2017) <https://www.gpo.gov/fdsys/pkg/FR-2017-04-05/pdf/2017-06770.pdf>.

⁵⁶ Krugel, *supra* note 1.

⁵⁷ See generally Coral Davenport, *Report Opens Way to Approval of Keystone Pipeline*, N.Y. TIMES (Jan. 31, 2014), <https://www.nytimes.com/2014/02/01/us/politics/report-may-ease-way-to-approval-of-keystone-pipeline.html> [<https://perma.cc/5A63-T57U>] (providing an example of environmental and industry groups using a pipeline assessment as an opportunity to express differing and broader viewpoints on energy and climate).

speech at Georgetown University he made a digression to announce a new environmental assessment standard for Keystone XL—it would be assessed based on its impact on international energy markets:

Now, I know there's been . . . a lot of controversy surrounding the proposal to build a pipeline, the Keystone pipeline, that would carry oil from Canadian tar sands down to refineries in the Gulf. And the State Department is going through the final stages of evaluating the proposal. That's how it's always been done. But I do want to be clear: Allowing the Keystone pipeline to be built requires a finding that doing so would be in our nation's interest. And our national interest will be served only if this project does not significantly exacerbate the problem of carbon pollution. The net effects of the pipeline's impact on our climate will be absolutely critical to determining whether this project is allowed to go forward.⁵⁸

Of course, President Obama was not referring to greenhouse gas emissions by the Keystone XL pipeline itself—steel piping does not emit air pollution. By “net effects of the pipeline,” he was referring to the emissions from increased oil production in Canada which, from that moment forward, were the public focus of the State Department's review.⁵⁹

But the salience of the pipeline and the President's announcement have left some legal observers with the inaccurate impression that the United States has established a new and consistent practice of assessing the impact of energy transport

⁵⁸ President Barack Obama, Remarks by President Obama on Climate Change (June 25, 2013), <http://www.whitehouse.gov/the-press-office/2013/06/25/remarks-president-climate-change> [<https://perma.cc/YZ38-GT3Y>]. It is interesting how closely the former President's speech parallels the objections that the Natural Resource Defense Council made to the original Keystone pipeline—objections that President Obama's State Department successfully resisted in court. U.S. DEP'T OF STATE, *supra* note 3, at 52 (“The proposal makes it clear that the pipeline is being built, primarily to increase imports of synthetic crude oil from the Canadian tar sands region. Canada's tar sands region, located within the Western Canadian Sedimentary Basin, is a leading example of the type of development underway in this rush to develop unconventional oil. More importantly, the proposed TransCanada Keystone Pipeline is integral in this effort to expand exploitation of tar sands oil resources in Northern Alberta.”).

⁵⁹ See, e.g., Maximilian Aufhammer, *It just doesn't add up. Why I think not building Keystone XL will likely leave a billion barrels worth of bitumen in the ground*, ENERGY INST. AT HAAS: ENERGY INST. BLOG (Mar. 24, 2014), <https://energyathaas.wordpress.com/2014/03/24/it-just-doesnt-add-up-why-i-think-not-building-keystone-xl-will-likely-leave-a-billion-barrels-worth-of-bitumen-in-the-ground/> [<https://perma.cc/TA6Y-ZKL3>]; Peter Erickson & Michael Lazarus, *Impact of the Keystone XL pipeline on global oil markets and greenhouse gas emissions*, NATURE CLIMATE CHANGE, Aug. 2014, at 1, 1–3; Christ Marshall, *Keystone XL Would Increase Greenhouse Gas Pollution*, SCI. AM. (Aug. 11, 2014), <https://www.scientificamerican.com/article/keystone-xl-would-increase-greenhouse-gas-pollution/> [<https://perma.cc/D3L6-SUKG>].

projects on global energy markets.⁶⁰ Nothing could be further from the truth: four and a half years later, the U.S. practice on environmental assessments has not yet begun to answer the questions raised by the President's climate speech.⁶¹

This Section explores in detail how this confusion has manifested in governmental reviews of oil, gas, coal, and power transport projects. But it is helpful to begin by identifying several of the overarching questions that continue to bedevil environmental assessments of these transport projects:

- (1) The first pressing question is whether President Obama's focus on oil production in Canada, upstream of the Keystone XL pipeline, will be applied to any other pipelines or other new energy transport facilities. For example, the U.S. is considering several liquefied natural gas ("LNG") export proposals⁶²—should it be assessing how those facilities might increase natural gas production in the United States? Federal agencies are divided on this question.⁶³
- (2) Second, should future environmental reviews consider how energy transport projects encourage energy consumption in the downstream markets that they serve? Should federal reviews of LNG facilities be assessing how those facilities might increase natural gas use in Europe and Asia? Again, federal agencies are divided.⁶⁴

⁶⁰ See Demerse, *supra* note 21 (arguing that, like the United States, pipeline reviews should "consider not just the impact of the pipeline itself, but also the impact of the product that flows through it").

⁶¹ See SALONI JAIN ET AL., SABIN CTR. FOR CLIMATE CHANGE LAW, HOW DID FEDERAL ENVIRONMENTAL IMPACT STATEMENTS ADDRESS CLIMATE CHANGE IN 2016? iii (2017), <http://columbiaclimatelaw.com/files/2017/02/Jain-et-al-2017-02-How-Did-Federal-EISs-Address-Climate-Change-in-2016.pdf> [<https://perma.cc/DFD2-RF3Q>] (reviewing 31 environmental impact statements and concluding that consideration of indirect effects in these statements was it appeared "tended to occur on an ad hoc basis, perhaps due to a lack of guidance about the scope of indirect emissions that should be considered for different types of projects").

⁶² See, e.g., James W. Coleman, *Importing Energy, Exporting Regulation*, 83 FORDHAM L. REV. 1357, 1363–67 (2014) (describing the energy transport boom in LNG and other fossil fuels); see also FED. ENERGY REG. COMM'N, NORTH AMERICAN LNG EXPORT TERMINALS: PROPOSED 1 (2017), <https://www.ferc.gov/industries/gas/indus-act/lng/lng-proposed-export.pdf> [<https://perma.cc/WE2D-RFC2>].

⁶³ See Letter from U.S. Envtl. Prot. Agency, *supra* note 50, at 2 (FERC's environmental review "perpetuates the significant emission" by not considering downstream impact and so "[w]e . . . request a headquarters level meeting with us to seek a definitive resolution to this matter before you [approve the pipelines] and so that you do not continue to take this approach in additional NEPA documents").

⁶⁴ Letter from U.S. Envtl. Prot. Agency to Kimberly D. Bose, U.S. Fed. Energy Regulatory Comm'n at 2–6 (Jan. 19, 2016) (on file with author) (FERC's environmental reviews of liquefied natural gas terminals must add assessment of "emissions associated with the production, transport, and combustion of the natural gas.").

- (3) Third, when the upstream and downstream impacts of an energy transport project involve production and consumption in other countries, should the agencies assess whether that foreign production and consumption is desirable?
- (4) Fourth, should the government consider all upstream and downstream impacts of an energy transport facility? Or should it focus only on global pollutants such as greenhouse gases? For instance, if the U.S. government authorizes more hydropower imports from Canada, should it consider the impacts of Canadian hydropower dams on aquatic species in Canada?
- (5) Fifth, how can the government predict the effect of a single energy transport facility on global energy markets, especially when there are competing modes of transport? For example, the most controversial part of the State Department's assessment of Keystone XL was its conclusion that denying the pipeline would actually increase global greenhouse gas emissions because oil would just move by trains instead.⁶⁵
- (6) Sixth, even if the government can estimate the impact of a pipeline or power line on upstream and downstream markets, how should it use that information to make a decision? Should it, as President Obama suggested, shut down any facility that encourages fossil fuel production? If so, how does that interact with the traditional standard for reviewing energy transport projects, which approves them *only if* they support energy production?⁶⁶

The United States government has not answered any of these questions. This inconsistency is likely the result of persistent interagency disagreement on the proper scope of review, with the Environmental Protection Agency ("EPA") favoring expanded environmental review and the agencies responsible for approving infrastructure, such as the Federal Energy Regulatory Commission ("FERC") and the Army Corps of Engineers opposing such review.⁶⁷ Thus, despite constant discussion of a new "Keystone" or "climate" test for new infrastructure, there is abiding and deep uncertainty about how infrastructure must be reviewed.

⁶⁵ See, e.g., U.S. Fed. Energy Regulatory Comm'n, Order Denying Applications for Certificate and Section 3 Authorization, 154 FERC ¶ 61,190 (Mar. 11, 2016).

⁶⁶ See U.S. Fed. Energy Reg. Commission, Order Granting Authorization under Section 3 of the Natural Gas Act and Issuing Certificates, 147 FERC ¶ 61,230 (June 19, 2014) (approving liquefied natural gas facility because it would lead to "increased production" as well as "increased economic activity and job creation, support for continued natural gas exploration, and increased tax revenue").

⁶⁷ See *supra* text accompanying notes 63–64; *infra* text accompanying notes 159–160; see also BUREAU OF OCEAN & ENERGY MGMT., OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROGRAM: 2012–2017: FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT 8–37 (2012) (rejecting consideration of upstream and downstream impacts for oil leases).

In fact, Keystone XL's environmental review is emblematic of U.S. reviews of energy transport in another way: the confused and inconsistent environmental review standards applied to all oil pipelines during the seven years that Keystone XL was reviewed reflect a wider confusion over how all U.S. energy transport facilities should be assessed.⁶⁸

A. Oil Transport

Though Keystone XL has received the bulk of attention, in the seven years that it was under review, several other oil pipelines were approved, under very different environmental assessment processes.⁶⁹ Only international pipelines require a Presidential Permit; domestic interstate oil pipelines are primarily regulated by the individual states that they cross.⁷⁰ Of course, domestic pipelines still cross federal, navigable waters, which requires a Clean Water Act permit that could, in theory, require an environmental review under NEPA. But as the Keystone XL pipeline was being delayed, the Obama administration reissued a twelve page nationwide general permit that allows domestic pipelines to be built without any individualized environmental review or review of their effects on energy markets.⁷¹ At the same time, President Obama issued a memorandum to expedite all reviews of domestic pipeline projects.⁷² In fact, TransCanada itself took advantage of these expedited procedures, cutting the Keystone XL project into two halves and then building the southern portion, from Cushing, Oklahoma to the U.S. Gulf Coast.⁷³

⁶⁸ See JEAN-PAUL RODRIGUE ET AL., *THE GEOGRAPHY OF TRANSPORTATION SYSTEMS* 294–301 (4th ed. 2017).

⁶⁹ See, e.g., Robert Tuttle, *Keystone Left Behind as Canadian Oil Pours into U.S.*, BLOOMBERG (Nov. 14, 2014), <https://www.bloomberg.com/news/articles/2014-11-14/keystone-left-behind-as-canadian-oil-pours-into-u-s> [<https://perma.cc/5VRY-J6WG>] (noting construction of Flanagan South and Seaway pipelines).

⁷⁰ See *Sierra Club v. U.S. Army Corps of Eng'rs*, 990 F. Supp. 2d 9, 26 n.13 (D.D.C. 2013) (denying motion for preliminary injunction against domestic crude oil pipeline because it, unlike Keystone XL “is an entirely *domestic* pipeline”).

⁷¹ See U.S. ARMY CORPS OF ENG'RS, *NATIONWIDE PERMIT 12*, 4 (2012), http://www.usace.army.mil/Portals/2/docs/civilworks/nwp/2012/NWP_12_2012.pdf [<https://perma.cc/HBD8-QYMR>] (environmental analysis that accompanies domestic crude pipelines makes no mention of climate change).

⁷² See Press Release, Office of the Press Sec'y, Presidential Memorandum—Expediting Review of Pipeline Projects from Cushing, Oklahoma, to Port Arthur, Texas, and Other Domestic Pipeline Infrastructure Projects (Mar. 22, 2012), <https://obamawhitehouse.archives.gov/the-press-office/2012/03/22/presidential-memorandum-expediting-review-pipeline-projects-cushing-okla> [<https://perma.cc/X6LN-Z9TJ>].

⁷³ See Alexandra B. Klass & Danielle Meinhardt, *Transporting Oil and Gas: U.S. Infrastructure Challenges*, 100 IOWA L. REV. 947, 978 (2015); see also Scott Haggett & Nia Williams, *TransCanada Activates Gulf Coast Project Pipeline, Delivering Crude Oil from Oklahoma to Texas*, HUFFINGTON POST (Jan. 22, 2014), <http://www.huffingtonpost.com/20>

Thus, far from reflecting a new comprehensive approach to oil pipelines, the Keystone XL review represented just one side of a newly bifurcated two track process. Pipelines that, like Keystone XL, required a full federal environmental review would now be subject to an expanded review in which the environmental impact statement would have to consider upstream emissions from the pipeline project. Run of the mill oil pipelines, by contrast, would receive no individualized environmental review.

These two levels of scrutiny may reflect President Obama's stated goal of increasing pipeline transport for U.S. oil, but not Canadian oil.⁷⁴ And the need for increased pipeline transport is indeed urgent: U.S. oil production has nearly doubled in the past seven years because of hydraulic fracturing, rising from under five million barrels per day in 2008, to nearly ten million barrels per day in 2015.⁷⁵ This has meant much larger volumes of oil traveling by methods such as crude by rail, that are more expensive and less safe than oil pipelines.⁷⁶

14/01/22/transcanada-gulf-coast-project-pipeline_n_4646562.html [https://perma.cc/5CJE-7WZ8] (describing construction of southern portion of the Keystone XL pipeline, known as the "Gulf Coast Project").

⁷⁴ Glen Kessler, *Obama's Claim that Keystone XL Oil 'Bypasses the U.S.' Earns Four Pinocchios*, WASH. POST (Mar. 2, 2015), https://www.washingtonpost.com/news/fact-checker/wp/2015/03/02/obamas-claim-that-keystone-xl-oil-bypasses-the-u-s-earns-four-pinocchios/?utm_term=.56907934fcf6 [https://perma.cc/S8FJ-M3KZ] ("I've already said I'm happy to look at how we can increase pipeline production for U.S. oil, but Keystone is for Canadian oil to send that down to the Gulf."). Note that this sentiment has been mirrored in lawsuits against natural gas pipelines where plaintiffs specifically contend "that a Canadian company like Enbridge shouldn't be allowed to take property from U.S. landowners." *Homeowners Sue to Stop Ohio Gas Pipeline Construction*, U.S. NEWS (May 14, 2017), <https://www.usnews.com/news/best-states/ohio/articles/2017-05-14/homeowners-sue-to-stop-ohio-gas-pipeline-construction> [https://perma.cc/JFF5-XLSE].

⁷⁵ U.S. Energy Info. Admin., *Petroleum & Other Liquids: Crude Oil Production*, EIA.GOV (July 31, 2017), https://www.eia.gov/dnav/pet/pet_crpdn_adc_mbbldpd_m.htm [https://perma.cc/3KMU-CBXW].

⁷⁶ Crude by rail is a particularly dangerous option for transporting the light and highly flammable crude oil unlocked by hydraulic fracturing. In just one incident, a train carrying oil from new oil fields in North Dakota derailed in the Canadian town of Lac Mégantic, killing 47 people in a massive explosion. Grant Robertson, *North Dakota's Explosive Bakken Oil: The Story Behind a Troubling Crude*, GLOBE & MAIL (Dec. 31, 2014), <http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/north-dakotas-explosive-bakken-oil-the-story-behind-a-troubling-crude/article16157981/> [https://perma.cc/CV6J-UCQD]; BUREAU OF OCEANS & INT'L. ENVTL. & SCI. AFFAIRS, *supra* note 15, at ES-12 (estimating that transport by rail instead of pipeline could cost oil producer "up to \$8" extra per barrel of oil transported); *see also id.* at ES-35 (estimating that denying the Keystone XL pipeline "would result in an estimated 49 additional injuries and six additional fatalities . . . on an annual basis" due to increased oil transport by rail); Klass & Meinhardt, *supra* note 73, at 974-75, 974 n.172 (discussing how crude oil is transported by rail because of the existing rail infrastructure in the U.S. that is widely used, despite this method being less safe and more expensive).

President Obama's bifurcated approach to pipeline review is one of the reasons that the Dakota Access Pipeline became a rallying point for both opponents and proponents of pipelines.⁷⁷ Both sides knew that if the federal government did a full environmental review, including an environmental impact statement for the pipeline, that would almost certainly include a lengthy assessment of upstream markets, like the controversial and extended review performed on the Keystone XL project. As a result, the legal controversy over Dakota Access has focused on whether the U.S. Army Corps of Engineers, the federal agency responsible for the project, should have done an environmental impact statement.⁷⁸

In July 2016, the Army Corps found that the Dakota Access pipeline's route, which crossed hundreds of federal water bodies, would have "no significant impact" on the environment.⁷⁹ This decision, taken after consultation with affected Indian tribes and public notice and comment, meant that the Army Corps would not do a full environmental impact statement.⁸⁰ The Standing Rock Sioux Tribe moved for a preliminary injunction to block the pipeline but the D.C. District Court denied the tribe's motion, ruling that the Army Corps's decision to approve the pipeline had likely complied with the law.⁸¹ But just moments after the court issued its decision, the Army Corps of Engineers, the Department of Justice, and the Department of Interior jointly announced that the pipeline would be halted, and that the Army Corps would reconsider its previous decisions, shocking both proponents and opponents of the pipeline.⁸²

In December 2016, the Army Corps of Engineers decided that its previous decisions were valid but that it would not approve construction of the pipeline until it

⁷⁷ See Peter Baker & Coral Davenport, *Trump Revives Keystone Pipeline Rejected by Obama*, N.Y. TIMES (Jan. 24, 2017), <https://www.nytimes.com/2017/01/24/us/politics/keystone-dakota-pipeline-trump.html> [<https://perma.cc/RTP9-T2E7>].

⁷⁸ Steve Almasy, *Dakota Access Pipeline: Army issues final permit*, CNN POLITICS (Feb. 8, 2017), <http://www.cnn.com/2017/02/07/politics/dakota-access-pipeline-easement-granted/index.html> [<https://perma.cc/VX8L-ZYN2>].

⁷⁹ U.S. ARMY CORPS OF ENG'RS, MITIGATED FINDING OF NO SIGNIFICANT IMPACT: ENVIRONMENTAL ASSESSMENT DAKOTA ACCESS PIPELINE PROJECT WILLIAMS, MORTON, AND EMMONS COUNTIES, NORTH DAKOTA 2 (2016), <http://www.energylawprof.com/wp-content/uploads/2017/03/DAPL-EA-VOL-1.pdf> [<https://perma.cc/EPZ8-W2VL>].

⁸⁰ *Standing Rock Sioux Tribe v. U.S. Army Corps of Eng'rs*, 205 F. Supp. 3d 4, 23–24 (D.D.C. 2016).

⁸¹ *Id.* at 7.

⁸² Ellen M. Gilmer, *Dakota Access: Tribes Notch 'Historic' Win, But Political Battles Continue*, E&E NEWS (Sept. 12, 2016), <https://www.eenews.net/stories/1060042643/> [<https://perma.cc/EPZ8-W2VL>]; Jack Healy & John Schwartz, *U.S. Suspends Construction on Part of North Dakota Pipeline*, N.Y. TIMES (Sept. 9, 2016), https://www.nytimes.com/2016/09/10/us/judge-approves-construction-of-oil-pipeline-in-north-dakota.html?_r=0 [<https://perma.cc/5YN8-YPCL>] (noting that opponents considered the "news . . . a stunning development," while proponents found the move "deeply troubling [as it] could have a long-lasting chilling effect on private infrastructure development in the United States.").

could perform a full environmental impact statement for the pipeline.⁸³ This Army Corps reversal was subsequently re-reversed by the incoming administration and remains embroiled in court disputes.⁸⁴ Environmental advocates continue to argue that the pipeline should receive a full environmental impact statement and climate test, following the Keystone XL precedent.⁸⁵ Indeed, although reporting on the Dakota Access pipeline has often focused on Indian law and the rights of indigenous

⁸³ Memorandum from Jo-Ellen Darcy, Office of the Assistant Sec'y, Dep't of Army, to the Commander, U.S. Army Corps of Eng'rs 3–4 (2016), <https://www.army.mil/e2/c/downloads/459011.pdf> [<https://perma.cc/55GY-Q6TK>]. On the other hand, the Army Corps reiterated that it had already approved the pipeline crossing and stood by its earlier finding, that the pipeline did not have a significant impact on the environment. *Id.* at 1, 4 (“On July 25, 2016, the U.S. Army Corps of Engineers (Corps) granted a permission to applicant Dakota Access, L.L.C., under Section 14 of the Rivers and Harbors Act of 1899, 33 U.S.C. § 408 (Section 408 permission), for a proposed crossing of Lake Oahe, a Corps project on the Missouri River The Section 408 permission was accompanied by an Environmental Assessment, as contemplated under the National Environmental Policy Act (NEPA), 42 U.S.C. §4321–4335, and its implement regulations The Environmental Assessment included a finding that granting the Section 408 permission for the proposed crossing of Lake Oahe did not constitute a major Federal action that would have significant environmental impacts [T]his decision does not alter the Army’s position that the Corps’ prior reviews and actions have comported with legal requirements.”); Ellen M. Gilmer, *Dakota Access: Obama Admin Denies Final Easement for Pipeline*, E&E NEWS (Dec. 4, 2016), <https://www.eenews.net/stories/1060046601/> [<https://perma.cc/K778-HABC>].

⁸⁴ See U.S. ARMY CORPS OF ENG'RS, DEP'T OF ARMY, EASEMENT FOR FUEL CARRYING PIPELINE RIGHT-OF-WAY LOCATED ON LAKE OAHE PROJECT, MORTON AND EMMONS COUNTIES, NORTH DAKOTA 1–42 (2016), http://www.eenews.net/assets/2017/02/09/document_ew_04.pdf [<https://perma.cc/Z59N-HRGF>]. This re-reversal from the Army Corps was made in response to direction from the new administration. Press Release, Office of the Press Sec'y, Presidential Memorandum Regarding Construction of the Dakota Access Pipeline (Jan. 24, 2017), <https://www.whitehouse.gov/the-press-office/2017/01/24/presidential-memorandum-regarding-construction-dakota-access-pipeline> [<https://perma.cc/EF3U-9KKU>]. Subsequently, the D.C. District court reviewing the case held that the Army Corps of Engineers should have done more to consider the danger of oil spills and the impacts of the pipeline on environmental justice and tribal rights. *Standing Rock Sioux Tribe v. U.S. Army Corps of Eng'rs*, Memorandum Opinion, Case No., Case 1:16-cv-01534-JEB (D.D.C. Jun. 14, 2017), https://www.eenews.net/assets/2017/06/15/document_ew_03.pdf [<https://perma.cc/7JPP-RU6W>]. But the court also held that the pipeline could remain in service while the Army Corps addressed this deficiency. *Standing Rock Sioux Tribe v. U.S. Army Corps of Eng'rs*, Memorandum Opinion, Case No., Case 1:16-cv-01534-JEB (D.D.C. Oct. 11, 2017), https://www.eenews.net/assets/2017/10/11/document_pm_04.pdf [<https://perma.cc/7356-XXNW>].

⁸⁵ Bill McKibben, *Why Dakota Is the New Keystone*, N.Y. TIMES (Oct. 28, 2016), https://www.nytimes.com/2016/10/29/opinion/why-dakota-is-the-new-keystone.html?_r=0 [<https://perma.cc/A9PQ-XPQG>]; Hannah Northey, *Senate Dems Call to Stop Project, Impose Climate “Test,”* E&E NEWS (Oct. 13, 2016), <http://www.eenews.net/greenwire/2016/10/13/stories/1060044209> [<https://perma.cc/4595-4MFZ>]; Letter from Sens. Ber-

peoples, the Standing Rock Sioux Tribe is not represented by Indian law experts, but instead by an environmental nonprofit, Earthjustice, which generally focuses on the broader impact of the fossil fuel industry.⁸⁶

The confusion and controversy over how to review new pipelines is now spreading to other countries as politicians and campaigners that are focused on climate change hope to export this expanded form of environmental assessment to the

nard Sanders et al. to President Barack Obama (Oct. 13, 2016), <http://www.sanders.senate.gov/download/letter-to-obama-on-dapl?inline=file> [<https://perma.cc/7MFX-X8UN>] (comparing the pipeline to Keystone XL and declaring that “[a]ll fossil fuel infrastructure projects of this significance must be subjected to a test to consider the long term climate impacts.”).

⁸⁶ See, e.g., Standing Rock Sioux Tribe’s Memorandum in Support of Its Motion for Partial Summary Judgment, *Standing Rock Sioux Tribe v. U.S. Army Corps of Eng’rs*, No. 1-16-cv-1534-JEB (D.D.C. Feb. 14, 2017) Doc. 117-1 (listing Earthjustice as attorneys for Plaintiff).

rest of the world.⁸⁷ Thus far, Canada has gone the furthest in implementing a Keystone XL style upstream analysis into its environmental reviews.⁸⁸ In another sign of the increasing prominence of pipeline review, one of Prime Minister Justin Trudeau's central promises as a candidate was to "ensure that environmental assessments include an analysis of upstream impacts and greenhouse gas emissions resulting from projects under review."⁸⁹ More than two years after Prime Minister Trudeau's election, it is still unclear how these expanded environmental reviews will

⁸⁷ See, e.g., EUROPEAN COMMISSION, COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE, THE COMMITTEE OF THE REGIONS AND THE EUROPEAN INVESTMENT BANK 10 (2017), https://ec.europa.eu/commission/sites/beta-political/files/2nd-report-state-energy-union_en.pdf [<https://perma.cc/7JCN-EB3P>] ("In view of scarce resources in the Member States, public resources should be used smartly. Member States should make sure that their support to energy infrastructure in the widest sense is in line with the principles of the Energy Union. Support should only be given if in line with the long-term energy policy of the European Union, avoiding stranded assets and carbon lock in."); Hilary Beaumont, *Canadian Pipelines to Face Climate Test Like the One that Killed Keystone XL*, VICE NEWS (Jan. 28, 2016), <https://news.vice.com/article/canadian-pipelines-to-face-climate-test-like-the-one-that-killed-keystone-xl> [<https://perma.cc/L5EC-DXL9>] (discussing Canadian pipeline proposals); Megan Darby, *New Gas Pipelines Could Face EU Climate Test*, CLIMATE HOME NEWS (Jan. 31, 2017), <http://www.climatechangenews.com/2017/01/31/new-gas-pipelines-could-face-eu-climate-test/> [<https://perma.cc/W5V7-XEN7>] ("A draft state of the energy union report, seen by Climate Home, urges member states to avoid funding infrastructure projects that are out of line with EU climate targets. It marks a shift in emphasis since last year, when new gas supply routes were touted as the main strategy to reduce reliance on Russian imports."); Anthony Swift, *The Lasting Legacy of the Keystone XL Debate Half a Year Later: Climate Change*, NAT. RESOURCES DEF. COUNCIL: EXPERT BLOG (May 6, 2016), <https://www.nrdc.org/experts/anthony-swift/lasting-legacy-keystone-xl-debate-half-year-later-climate-change> [<https://perma.cc/H8BF-UXET>] ("Keystone XL has achieved a lasting legacy. The 'keep it in the ground' movement is going strong, having sprung like Hydra from the Keystone campaign. But our work will go on until the social license to extract and burn fossil fuels is gone. One can only hope that the unfolding tragedies at opposite ends of the world—last week's news that half the Great Barrier Reef is dead from warming waters and this weeks [sic] burning of Fort McMurray—fatally erodes what remains of that social license."); Demerse, *supra* note 21 (analyzing Canada's discussion of pipelines).

⁸⁸ Katie Valentine, *Canada Just Announced a Major Pipeline Reform*, THINK PROGRESS (Jan. 28, 2016), <https://thinkprogress.org/canada-just-announced-a-major-pipeline-reform-9b1729c8b3e4> [<https://perma.cc/U3PZ-5GMK>].

⁸⁹ *Environmental Assessments*, LIBERAL, <https://www.liberal.ca/realchange/environmental-assessments/> [<https://perma.cc/5FXV-F2AT>] (last visited Aug. 5, 2017); see also Tamsyn Burgmann, *Justin Trudeau Unveils Liberals' Environmental Platform*, STAR (June 29, 2015), <https://www.thestar.com/news/canada/2015/06/29/justin-trudeau-unveils-liberals-environmental-platform.html> [<https://perma.cc/N2XF-5JX2>] (noting that despite their skepticism, environmental groups were particularly encouraged by "Trudeau's commitments to including upstream carbon emissions in his proposed amendments to the environmental review process"); Allison Lampert, *Canada to Set Climate Change Tests in Pipeline Reviews: Trudeau*, REUTERS (Jan. 26, 2016), <http://www.reuters.com/article/us-canada-energy->

work. Initially, Trudeau's new government simply promised to report the "upstream" emissions associated with existing oil pipeline proposals.⁹⁰ Then it stated that it would consider upstream emissions from all oil and gas proposals, but seemingly defined "upstream" narrowly to include only extraction, processing, handling, and transport of fossil fuels that is "exclusively linked to the project."⁹¹

Ultimately, the Canadian government simply approved expansion of the controversial Trans Mountain pipeline, while simultaneously issuing a study on the upstream emissions from the project.⁹² The government's approval did not offer explanation of how that study affected its decision to approve the project, which will triple the amount of oil that can be carried from Alberta to Vancouver, British Columbia.⁹³

environment-idUSKCN0V41GI [https://perma.cc/WS5D-AYFE] ("What we are going to roll out very soon, as we promised in our election campaign, is to establish a clear process which will consider all the greenhouse gas emissions tied to a project, which will build on the work already done.").

⁹⁰ *Interim Measures for Pipeline Reviews*, GOV'T OF CAN., <https://www.canada.ca/en/natural-resources-canada/news/2016/01/interim-measures-for-pipeline-reviews.html> [https://perma.cc/M6XB-84LH] (last modified Jan. 27, 2016) (stating that for two current oil pipeline proposals, the government would "[a]ssess the upstream greenhouse gas emissions associated with this project and make this information public").

⁹¹ *Estimating Upstream GHG Emissions*, C. Gaz. pt. I, at 787 (Mar. 19, 2016). (Can.), <http://www.gazette.gc.ca/rp-pr/p1/2016/2016-03-19/pdf/g1-15012.pdf> [https://perma.cc/VX8L-ZYN2].

⁹² Ian Austen, *Justin Trudeau Approves Oil Pipeline Expansion in Canada*, N.Y. TIMES (Nov. 29, 2016), <https://www.nytimes.com/2016/11/29/world/canada/canada-trudeau-kinder-morgan-pipeline.html> [https://perma.cc/27NC-VBUX] ("[L]ike the protests that led the Obama administration to block the Keystone XL pipeline project from Canada, many people see blocking Kinder Morgan as a way to limit development of the oil sands."); *Prime Minister Justin Trudeau's Pipeline Announcement*, JUSTIN TRUDEAU, PRIME MINISTER OF CANADA (Nov. 30, 2016), <http://pm.gc.ca/eng/news/2016/11/30/prime-minister-justin-trudeaus-pipeline-announcement> [https://perma.cc/5SKP-T6T5] ("[T]here isn't a country in the world that would find billions of barrels of oil and leave it in the ground while there is a market for it.").

⁹³ *Prime Minister Justin Trudeau's Pipeline Announcement*, *supra* note 92 ("The project will effectively triple our capacity to get Canadian energy resources to international markets beyond the United States."). In late summer 2017, the Canadian government announced that it would consider downstream as well as upstream emissions for a new pipeline proposal—TransCanada's "Energy East" proposal to carry oil from Alberta to the east coast of Canada. *Energy East Pipeline review to look at upstream, downstream GHG emissions*, CBC NEWS, (Aug. 23, 2017), <http://www.cbc.ca/news/canada/calgary/energy-east-pipeline-review-ghg-greenhouse-gas-1.4259032> [https://perma.cc/ET5E-G34C]. Before it could be clarified how such a review would work, TransCanada canceled the project, citing the changing review process. *TransCanada cancels \$15.7B Energy East pipeline project*, THE CALGARY HERALD (Oct. 5, 2017), <http://calgaryherald.com/business/energy/transcanada-cancels-energy-east-pipeline-project> [https://perma.cc/2LZ7-NBD9].

The study on upstream emissions related to the Trans Mountain project provides a helpful example of why such studies are so unlikely to produce useful information. First, the government calculated the upstream greenhouse gas emissions that would be required to produce the quantity of oil that the expanded pipeline would carry.⁹⁴ But the study quickly notes how complex it is to determine whether some or all of these emissions would be “incremental”⁹⁵—that is, whether these emissions would occur because the pipeline was approved or whether they would instead occur whether or not the pipeline was approved.⁹⁶ At the end of the day, the study concludes that it is unlikely that any significant incremental emissions could be specifically attributed to the pipeline.⁹⁷

Canada’s attempt to consider upstream emissions illustrates the fundamental difficulty of calculating the impact of a pipeline (or any other single energy transport proposal) on global energy markets. After all, if one pipeline is not approved, producers may find other ways to ship their product to consumers.⁹⁸ Even if producers do not find alternate transport to market and have to limit their oil production, their production is very likely to be replaced by increased oil production from other producers in other countries around the world.⁹⁹ The only way to limit oil production and consumption by pipeline blockade would be to cut off enough oil production to create a worldwide scarcity, raising the global price of oil enough to deter consumption.¹⁰⁰ So the upstream impact of an oil pipeline in some ways depends on its downstream impact: if oil consumers around the world just switch to other sources of oil,

⁹⁴ ENV’T & CLIMATE CHANGE CAN., TRANS MOUNTAIN PIPELINE ULC—TRANS MOUNTAIN EXPANSION PROJECT: REVIEW OF RELATED UPSTREAM GREENHOUSE GAS EMISSIONS ESTIMATES 5 (Nov. 2016), <http://www.energylawprof.com/wp-content/uploads/2017/03/Trans-Mountain-Upstream-Emissions-Nov.pdf> [<https://perma.cc/3HHK-8UZY>].

⁹⁵ *Id.* at 5 (“The degree to which the estimated emissions associated with the additional capacity would be incremental depends on the considerations that drive investment decisions for crude oil producers, namely the expected price of oil, the availability and costs of other transportation modes (e.g., crude-by-rail), whether other pipeline projects are built, and costs of production.”).

⁹⁶ *Id.* at 5 n.1 (“The word *incremental* is used when discussing the production (and resulting emissions) that could be directly enabled by this project.”).

⁹⁷ *Id.* at 38–43 (concluding that the only scenario in which the pipeline could lead to increased greenhouse gas emissions is if (a) there were also other pipelines built from the same location, (b) oil prices rise above \$60, and (c) oil that would have been produced elsewhere in the world as an alternative to Canadian oil would have been produced using methods that emitted fewer greenhouse gas emissions or Canadian oil would increase global oil consumption by lowering global oil prices).

⁹⁸ *Id.* at 34–40 (considering the impact of different scenarios for pipeline approvals and crude by rail transport on oil production in Canada).

⁹⁹ *Id.* at 40–42 (considering what other types of fuels might be replaced by increased production from Canada).

¹⁰⁰ *Id.* at 41 (discussing the elasticity of global demand for oil—i.e. how much oil consumption could decline in response to more expensive global oil supply).

blocking a particular source of oil production will have little net impact on global greenhouse gas emissions.¹⁰¹

Thus, determining the impact of a single pipeline on global climate emissions means estimating (a) how much of the oil will get to market anyway; (b) which global producers will respond to make up any shortfall; (c) what quantity of greenhouse gases those global producers emit; (d) whether the overall market adjustment will marginally raise prices; and (e) to what extent consumers will reduce their consumption in response to that price increase.¹⁰² So even in theory it is difficult to predict how a pipeline will impact global energy markets. In practice, in unpredictably changing energy markets, it is nearly impossible to predict the upstream and downstream impact of a new pipeline project.¹⁰³

Keystone XL itself is another excellent example of the futility of studying upstream emissions from a particular energy transport project. Tasked by the President with reviewing the pipeline's impact on Canadian oil production, the State Department initially concluded that it would have no impact because "any one crude oil transport project . . . is unlikely to significantly impact the rate of extraction" of oil.¹⁰⁴ The State Department supported this statement with a lengthy market analysis which showed that at any price over \$75 per barrel of oil, oil production would expand in Canada regardless of whether new pipelines were built.¹⁰⁵ Even if all other pipeline proposals that could take Canadian oil were also rejected, producers would just pay a little more—\$8 per barrel—to send oil by rail.¹⁰⁶ So approving the pipeline would increase oil profits, increase transport safety,¹⁰⁷ and actually decrease global greenhouse gas emissions by preventing inefficient and dangerous transport of oil by railroad tank car.¹⁰⁸

At the time that the State Department published this encouraging conclusion, oil prices had hovered near \$100 per barrel for three years.¹⁰⁹ But the Department recognized that oil prices could change, so it considered two other scenarios. Using the same economic models, it found that if oil prices fell to \$65–\$75 per barrel, then

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.* at 41–42.

¹⁰⁴ BUREAU OF OCEANS & INT'L. ENVTL. & SCI. AFFAIRS, *supra* note 15, at ES-16.

¹⁰⁵ *Id.*

¹⁰⁶ *Id.* at ES-34 (estimating that rejecting the pipeline would lead to higher greenhouse gas emissions than approving it, due to the "28 to 42 percent" higher energy requirements of shipping crude by rail).

¹⁰⁷ *Id.* at ES-35 (estimating that approving the Keystone XL pipeline would prevent "49 additional injuries and six additional fatalities . . . on an annual basis" by avoiding rail transport of oil).

¹⁰⁸ *Id.*

¹⁰⁹ U.S. Energy Info. Admin., *Petroleum & Other Liquids*, EIA.GOV (Aug. 2, 2017), <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RWTC&f=D> [<https://perma.cc/J6YT-GMBM>] (showing that prices reached \$100 per barrel in February 2011, three years before the State Department published its analysis and three and a half years before prices fell much lower, reach a low of \$29 per barrel in February 2016).

rejecting the pipeline could have a drastic impact on Canadian oil production because rising transportation costs could endanger all new production projects; in this price band, rejecting the pipeline would potentially decrease new production by a volume even greater than the volume that the pipeline would have carried.¹¹⁰ Finally, if prices fell below \$65 the State Department's conclusions were more equivocal—the models showed that, at that price, there would be no new projects regardless of what happened to the pipeline but the State Department speculated that rejecting the pipeline “could further curtail production.”¹¹¹

The State Department's analysis of the upstream impact of the Keystone XL pipeline was state of the art: one hundred and fifty pages modeling the cost of transport by the new pipeline, the cost of transport by alternate routes, and the cost curve of upstream projects that could, in theory, depend on the new pipeline.¹¹² It was also useless as a guide to action.

By the time the State Department actually made a decision on the project, a barrel of oil was selling at \$44 per barrel, so its years of analysis were beside the point.¹¹³ And even in theory, its carefully modeled conclusions had serious limitations as both environmental and industry groups quickly pointed out:

- (1) Is it plausible that lowering transport costs—and thus increasing profits—of oil producers would not encourage *any* marginal investment in increased Canadian oil production? Maybe lowering the cost of transporting oil by \$8 per barrel would not be the difference between opening and shuttering any major project. But surely some producers might do more to ramp up marginal production if they were earning significantly more on each barrel of oil—shifting investments forward in time or doing more to raise the rate of production at existing projects.¹¹⁴

¹¹⁰ BUREAU OF OCEANS & INT'L ENVTL. & SCI. AFFAIRS, *supra* note 15, at ES-35.

¹¹¹ *Id.* at ES-12.

¹¹² See generally MICHAEL LAZARUS & PETER ERICKSON, GREENHOUSE GAS EMISSIONS IMPLICATIONS OF THE KEYSTONE XL PIPELINE ii (2013), <https://www.sei-international.org/mediamanager/documents/Publications/Climate/SEI-WP-2013-11-KeystoneXL-price-effects.pdf> [<https://perma.cc/2R6K-RJWW>] (discussing climate policy and analysis, and “the role of energy transportation infrastructure in shaping energy systems, energy use and related greenhouse gas emissions”).

¹¹³ U.S. DEP'T OF STATE, *supra* note 9, at 12; U.S. Energy Info. Admin., *supra* note 109 (showing that the price of oil in November 2015, when the State Department reached its decision was \$44 per barrel). For a description of how this delay impacted investment in oil transport over this period, see James W. Coleman, *Policymaking by Proposal: How Agencies Are Using Proposed Rules to Transform Industry Long Before Final Rules Are Tested in Court*, 24 GEO. MASON L. REV. 497, 512–14 (2017).

¹¹⁴ Erickson & Lazarus, *supra* note 59, at 1–3 (arguing that, contrary to the State Department's analysis, the Kestone XL pipeline could massively increase greenhouse gas emissions from oil production).

- (2) Is it plausible that at exactly \$75 per barrel of oil the pipeline would suddenly switch from having no impact at all on oil production to being an economic necessity for the entire industry? Like the previous question, the implausibility of this conclusion is likely driven by the limitations of economic models that produce false precision.
- (3) Is it plausible that the rail system could, on the margin, take another pipeline worth of crude without drastically raising crude by rail costs?¹¹⁵
- (4) Even if rejecting the pipeline would decrease oil production, and thus, greenhouse gas emissions in Canada, why would that necessarily have any net impact on the greenhouse gas emissions of the global oil industry? This question was not discussed in the Keystone XL review but, as noted above, prevented the Canadian reviews from reaching any firm conclusions.¹¹⁶

The state of the art Keystone XL environmental assessment process vividly demonstrates why assessing upstream and downstream emissions from energy transport projects can be a costly and useless endeavor. In the end, after seven years of review, the State Department apparently reached this conclusion as well. In its final decision, the State Department confirmed its view that the project was “unlikely to significantly impact [oil] extraction” but said that it should be rejected anyway because, despite its analysis, it was “perceived as enabling” oil extraction.¹¹⁷ Seven years of review and the State Department’s best economic modeling produced a result that even the Department decided was so useless that it should be subordinated to contrary popular perception.¹¹⁸

B. Natural Gas Pipelines and Liquefied Natural Gas Exports

Since 2008, hydraulic fracturing and directional drilling—commonly referred to as “fracking”—have transformed U.S. natural gas markets by unlocking vast reserves of natural gas stored in shale formations.¹¹⁹ This shale revolution boosted

¹¹⁵ Elana Schor, *Keystone XL: Greens Fume at State’s Bet on Oil Sands as the New Bakken*, E&E NEWS (Feb. 11, 2014), http://www.eenews.net/special_reports/pipeline_politics/stories/1059994362 [<https://perma.cc/363Q-FDDZ>] (questioning “[w]hether the Gulf [Coast] can develop enough infrastructure to process volumes of oil sands crude comparable to the 700,000-plus daily barrels that [Keystone] XL would carry”).

¹¹⁶ ENV’T & CLIMATE CHANGE CAN., *supra* note 94, at 42–43.

¹¹⁷ U.S. DEP’T OF STATE, *supra* note 9, at 12.

¹¹⁸ *Id.*

¹¹⁹ Thomas W. Merrill & David M. Schizer, *The Shale Oil and Gas Revolution, Hydraulic Fracturing, and Water Contamination: A Regulatory Strategy*, 98 MINN. L. REV. 145, 152–64 (2013); Coleman, *supra* note 62, at 1364–65.

production, drastically lowered prices, and doubled U.S. reserves.¹²⁰ The one constant over this period of rapid change has been a drive for new natural gas transport infrastructure.¹²¹

Unlike coal or oil, natural gas is very expensive to transport on a small scale.¹²² The two main methods of moving natural gas—pipeline and ships carrying liquefied

¹²⁰ U.S. Energy Info. Admin., *Natural Gas: U.S. Natural Gas Wellhead Price*, EIA.GOV (July 31, 2017), <http://www.eia.gov/dnav/ng/hist/n9190us3m.htm> [<https://perma.cc/5FXQ-ZHHW>].

¹²¹ During the decade of peaking natural gas prices, the U.S. added over 20,000 miles of natural gas pipelines to connect expanding sources of natural gas production with natural gas demand. U.S. ENERGY INFO. ADMIN., MAJOR CHANGES IN NATURAL GAS PIPELINE TRANSPORT CAPACITY 1998–2008 2 (2008), https://www.anrpl.com/documents/ANR_1_29_16_Rate_Case_Filing/RateCaseDocs/Exhibit%20No.%20ANR-009.pdf (“More than 20,000 miles of new natural gas transmission pipeline, representing more than 97 billion cubic feet per day of capacity, were placed in service in the United States over the past 10 years.”). That building boom has continued in the new era of natural gas abundance and is only likely to increase. And it is likely that the pace of pipeline building will continue as the nation moves from coal to natural gas for electricity and heating oil to natural gas for heating. U.S. Energy Info. Admin., *Natural Gas Expected to Surpass Coal in Mix of Fuel Used for U.S. Power Generation in 2006*, EIA.GOV (Mar. 16, 2016), <https://www.eia.gov/todayinenergy/detail.php?id=25392> [<https://perma.cc/TF7F-AY5S>]; U.S. Energy Info. Admin., *Sulfur Content of Heating Oil to be Reduced in Northeastern States*, EIA.GOV (Apr. 18, 2012), <https://www.eia.gov/todayinenergy/detail.php?id=5890> [<https://perma.cc/3A8U-WN6F>]. In the decade of high gas prices, U.S. importers sought to build several new LNG import facilities. Clifford Krauss, *Reversal of Fortune for U.S. Gas: After Import Plans Fizzle, a Push for Exports May Fall Short*, N.Y. TIMES, Jan. 5, 2013, at B1. Now with shale gas driving U.S. prices below \$3 per million BTUs, and Asian shale gas prices over \$15 investors have submitted several applications to the Department of Energy for new LNG export facilities that could ship to Asia. EY, GLOBAL LNG: WILL NEW DEMAND AND NEW SUPPLY MEAN NEW PRICING? 10 (2013), [http://www.ey.com/Publication/vwLUAssets/Global_LNG_New_pricing_ahead/\\$FILE/Global_LNG_New_pricing_ahead_DW0240.pdf](http://www.ey.com/Publication/vwLUAssets/Global_LNG_New_pricing_ahead/$FILE/Global_LNG_New_pricing_ahead_DW0240.pdf) [<https://perma.cc/VUC5-9NNH>]. Since 1981, the global LNG trade has doubled every eight years. INTERNATIONAL GAS UNION: WORLD LNG REPORT 2011 7 (2012), <http://www.igu.org/gas-knowhow/publications/igu-publications/LNG%20Report%202011.pdf> [<https://perma.cc/LLC4-4LTA>]; Knut Einar Rosendahl & Eirik Lund Sagen, *The Global Natural Gas Market: Will Transport Cost Reductions Lead to Lower Prices?*, 30 ENERGY J. 17, 17 (2009) (“Over the last decade the costs of LNG have been significantly reduced, more producers have entered the gas market in general and the LNG market in particular, and the trade between continents has increased.”).

¹²² Nancy J. Forbis, *The Shut-In Royalty Clause: Balancing the Interests of Lessors and Lessees*, 67 TEX. L. REV. 1129, 1131 (1989) (“Natural gas is difficult, if not impossible, to store outside a reservoir, and thus producers must either transport gas to a pipeline as it is produced or retain it at the wellhead until they can locate a willing purchaser.”) (citations omitted); Mark P. Gergen, *The Use of Open Terms in Contract*, 92 COLUM. L. REV. 997, 1018 n.68 (1992) (discussing economic peril for gas producer “where gas found cannot be sold currently because a pipeline is unavailable and the gas cannot otherwise be marketed”); Jacqueline Lang Weaver, *Implied Covenants in Oil and Gas Law Under Federal Energy*

natural gas—both require billions of dollars of capital investment.¹²³ Interstate natural gas pipelines must be designed to avoid gas leakage, and liquefaction facilities must cool natural gas most of the way to absolute zero until the gas turns into a liquid that can be transported on quarter billion dollar refrigerated ships.¹²⁴ So when natural gas production increases in one place, there is generally more than can be used in the area and the local price of gas falls rapidly until new infrastructure can bring it to an established market in need of more gas; by the same token, when local natural gas demand increases, there is no quick way to bring more natural gas to the area, so it often creates a local price spike that will persist until new supplies can be connected to the market.¹²⁵ As a result, changing natural gas markets often open price

Price Regulation, 34 VAND. L. REV. 1473, 1518 n.169 (1981) (“Gas is not easily stored above ground and can be transported only by pipeline. Moreover, gas pipelines require large capital investments and can be justified only if the pipeline owner has secure sources of supply under long-term gas purchase contracts.”).

¹²³ See James Coleman, *The Shale ‘Revolution’ Is About Gas Prices and Oil Production*, ENERGY COLLECTIVE (July 17, 2014), <http://theenergycollective.com/energylawprof/432466/shale-revolution-about-gas-prices-oil-production> [<https://perma.cc/M3NE-QCRN>] (“Increased production of natural gas has had a dramatic effect on natural gas prices because natural gas is hard to transport. If you can’t send natural gas by an existing pipeline to an existing market, your next best option may be to cool it into a liquid at -162 °C, load the liquid onto a giant, insulated, quarter-billion dollar vessel and ship it across the ocean, where it can be regasified and burned.”).

¹²⁴ Jacob Dweck et al., *Liquefied Natural Gas (LNG) Litigation After the Energy Policy Act of 2005: State Powers in LNG Terminal Siting*, 27 ENERGY L. J. 473, 473 (2006) (“Transporting natural gas very long distances from gas fields located in regions of the world with little or nonexistent consuming markets across the oceans to large consuming markets is made feasible by chilling the gas to minus 260 degrees Fahrenheit, at which point the natural gas changes to a liquid state, reducing its volume to 1/600th that of vaporous natural gas.”). Absolute zero is minus 460 degrees Fahrenheit. Sarah Zielinski, *Absolute Zero: Why Is a Negative Number Called Absolute Zero?*, SMITHSONIAN.COM (Jan. 1, 2008), <http://www.smithsonianmag.com/science-nature/absolute-zero-13930448/> [<https://perma.cc/5R5D-QXLX>].

¹²⁵ Coleman, *supra* note 123 (Because of the cost of shipping gas “when natural gas production rises, prices fall quickly because there is little use for the excess gas in the markets it can reach. Prices will keep falling until 1) gas is so cheap that energy users reliant on alternatives like coal and heating oil switch to gas, 2) gas is so cheap that it can be profitably liquefied and sent overseas, or 3) gas is so cheap that it’s no longer worthwhile to keep expanding production.”). The U.S. government has repeatedly said that until global prices converge, global liquefied natural gas transport will continue to increase. U.S. ENERGY INFO. ADMIN., EFFECT OF INCREASED NATURAL GAS EXPORTS ON DOMESTIC ENERGY MARKETS 3 (2012), http://www.eia.gov/analysis/requests/fe/pdf/fe_lng.pdf [<https://perma.cc/PNQ3-TFQC>] (“Unlike the oil market, current natural gas markets are not integrated globally. In today’s markets, natural gas prices span a range from \$0.75 per million British thermal units (MMBtu) in Saudi Arabia to \$4 per MMBtu in the United States and \$16 per MMBtu in Asian markets that rely on LNG imports. Prices in European markets, which reflect a mix of

differentials that set off a race to build new multibillion dollar infrastructure, and companies that win the race can reap even greater rewards—buying gas at depressed prices in markets with abundant gas and selling at a premium in gas starved markets.¹²⁶

Increased natural gas transport is also crucial to meeting several of the United States' domestic and international policy goals. If it can be brought to urban markets, natural gas can replace dirtier sources of electricity and heat such as coal and fuel oil.¹²⁷ And liquefied natural gas exports to developing countries could help them move away from coal power.¹²⁸ Natural gas is also a natural complement for increased renewable energy; the electric grid operators must constantly balance power supplied and demanded, and natural gas power—unlike nuclear and coal power—can easily be ramped up or down to compensate for fluctuations in power from intermittent sources like wind and solar.¹²⁹ Natural gas is also often produced as a byproduct of oil extraction and if there are no pipelines to take it to market, it is simply burned off (a process known as “flaring”), wasting the gas while releasing carbon dioxide into the atmosphere.¹³⁰ Conversely, if there were strong markets for natural gas, extraction and transport companies would have stronger incentives to avoid leakage and flaring as their product grew more valuable.

Many environmental groups strongly oppose increased natural gas transport for a related reason: they agree that increased transport will encourage use of natural gas but they want to stop all fossil fuel use as quickly as possible rather than starting a transition from coal to gas.¹³¹ As a result, they are pushing the federal government

spot prices and contract prices with some indexation to oil, fall between U.S and Asian prices.”).

¹²⁶ See James Coleman et al., *Calibrating Liquefied Natural Gas Export Life Cycle Analysis: Accounting for Legal Boundaries and Post-Export Markets*, CAN. INST. RESOURCES L., May 2015, at 1, 7–11 (describing all the liquefied natural gas projects looking to profit on gas price differentials between Canada and Asian markets where gas is expensive).

¹²⁷ See Union of Concerned Scientists, *Environmental Impacts of Natural Gas*, http://www.ucsusa.org/clean-energy/coal-and-other-fossil-fuels/environmental-impacts-of-natural-gas#.WYEw_xiZORs [<https://perma.cc/V9BU-5L2Q>] (last visited Aug. 5, 2017).

¹²⁸ James Coleman & Sarah Marie Jordaan, *Clearing the Air: How Canadian Liquefied Natural Gas Exports Could Help the World Meet Its Climate Goals*, C.D. HOWE INST., Aug. 24, 2016, at 2.

¹²⁹ *Id.* at 2 (“Unlike solar and wind power, natural gas plants can be run at any time on demand. Such plants even work well with solar and wind because they are easy to ramp up or down to match power demand by supplementing the intermittent power these renewable sources provide.”).

¹³⁰ See Klass & Meinhardt, *supra* note 73, at 1009–15 (describing extensive flaring in North Dakota as a result of lack of transport options to bring natural gas to markets in need of gas).

¹³¹ Hannah Northey, *LNG: Democrats Face Tricky Balancing Act as Export Debate Grows Louder*, E&E NEWS (Jan. 15, 2014), <http://www.eenews.net/stories/1059992926> [<https://perma.cc/V49Z-TYMQ>].

to expand environmental assessments for new liquefied natural gas facilities and interstate pipelines to consider how those transport facilities will encourage natural gas production and consumption.¹³²

Downstream emissions from liquefied natural gas facilities are difficult to assess because the net impact of natural gas exports depends on what sources of power gas displaces in importing countries—that is, what power sources will other countries forgo if they have the opportunity to import natural gas that they can burn for electricity?¹³³ This question is hard to answer for two related reasons. First, liquefied natural gas facilities are so expensive that they are only worthwhile if they can be used for several decades; energy markets may change dramatically over this timespan so it is difficult to tell what countries will eventually import liquefied natural gas from a facility that is built today.¹³⁴ Second, it is hard to know what alternative sources of energy these natural gas exports will displace in importing countries.¹³⁵ If gas is used to replace dirtier sources, like coal, it may reduce greenhouse gas emissions in importing countries; but if it is used to phase out nuclear power, or delay a transition to renewable power, it could raise greenhouse gas emissions in importing countries.¹³⁶

On the other hand, it could be easier to assess the *upstream* consequences of natural gas transport projects on natural gas production in the United States. In fact, the case for considering upstream impacts of natural gas transport is stronger than the case for considering upstream impacts of oil pipelines like Keystone XL. First, because it is more expensive to transport gas, it is somewhat easier to estimate how

¹³² See Amy Harder, *Are Natural-Gas Exports the Next Keystone?*, WALL ST. J. (May 18, 2014), <https://blogs.wsj.com/washwire/2014/03/18/are-natural-gas-exports-next-key-stone/> [<https://perma.cc/RMG8-8FKE>]; Flyer, *supra* note 25, at 307–13 (arguing that FERC must consider upstream and downstream impacts in natural gas pipeline and liquefied natural gas facility approvals).

¹³³ See Coleman & Jordaan, *supra* note 128, at 2 (presenting a life cycle analysis of greenhouse gas emission from liquefied natural gas production, export, and combustion, and showing why “assessing the downstream emissions of a particular LNG project is impractical because it is difficult to predict where the LNG will be sent”).

¹³⁴ *Id.* at 6 (“The full impact of an individual facility on global emissions is nearly impossible to estimate unless regulators know where the LNG will be sent when they approve a project, or how evolving market conditions may change the original estimation of the impact.”).

¹³⁵ *Id.* at 2–3 (“LNG might displace either coal or low-GHG sources; . . . natural gas plants are ideally suited to replace coal plants, and . . . might actually facilitate an expansion of renewable sources such as solar and wind by being able to ramp up or down to complement these renewable sources’ intermittent output. Countries could also use natural gas as a crutch to help them phase out nuclear power. Alternatively, they could use natural gas, rather than expanding renewables, to meet new demand or replace old facilities.”).

¹³⁶ *Id.* at 5.

a single new transport facility impacts gas production.¹³⁷ If an oil pipeline is not approved, there are still many options for moving the oil to market such as tank cars by rail or barges by rivers.¹³⁸ In contrast, gas is hard to transport, so there may be situations where producers will not invest in natural gas production if there is no clear way to bring the product to market.¹³⁹ Second, most of the new natural gas production that supplies liquefied natural gas export projects is in the United States, so U.S. review of these upstream markets would arguably be more appropriate than U.S. review of energy markets in other countries.¹⁴⁰ Third, run of the mill interstate natural gas pipelines, unlike oil pipelines, are already subject to a federal rather than state review: they must obtain a certificate of public convenience and necessity from the Federal Energy Regulatory Commission.¹⁴¹

Nevertheless, the U.S. government has thus far resisted considering how new pipelines and liquefied natural gas facilities will affect natural gas production and consumption.¹⁴² The Federal Energy Regulatory Commission has approved eleven of fourteen proposed liquefaction facilities and 154 pipeline applications since 2009.¹⁴³ Yet FERC has resisted all calls to consider the environmental impact of

¹³⁷ Dawn Russell et al., *The Real Impact of High Transportation Costs*, CSCMP's SUPPLY CHAIN Q. (Aug. 6, 2014), <http://www.supplychainquarterly.com/topics/Logistics/20140311-the-real-impact-of-high-transportation-costs/> [<https://perma.cc/6WRS-9P7D>].

¹³⁸ Both of these modes of oil transportation have expanded rapidly with increased oil production from tight oil formations in the United States. Julie M. Carey, *Rail Emerging as Long-term North American Crude Option*, OIL & GAS J. (Aug. 5, 2013), <http://www.ogj.com/articles/print/volume-111/issue-8/transportation/rail-emerging-as-long-term-north-american.html> [<https://perma.cc/JQ53-C8EG>] (discussing increased transport “by pipeline, rail, and barge”).

¹³⁹ ROBIN BATES & NEIL FRASER, INVESTMENT DECISIONS IN THE NATIONALISED FUEL INDUSTRIES 138–76 (1974).

¹⁴⁰ Of course, as a matter of policy it may be wiser to leave some of these decisions to the states rather than allowing the federal government to set natural gas production policy. See *infra* Part IV.

¹⁴¹ 15 U.S.C. § 717f(c)(1)(A) (2010) (forbidding interstate transport of natural gas without a “certificate of public convenience and necessity issued by the Commission authorizing such acts or operations”).

¹⁴² See FED. ENERGY REG. COMM’N, ENVIRONMENTAL ASSESSMENT FOR THE SABINE PASS LIQUEFACTION PROJECT 2-99-2-100 (2011), <http://energy.gov/sites/prod/files/EA-1845-FEA-2011.pdf> [<https://perma.cc/83S8-UMWU>]. FERC has exclusive authority to approve or deny siting, construction, and operation of liquefied natural gas facilities. 15 U.S.C. § 717b(e)(1) (2005) (“The Commission shall have the exclusive authority to approve or deny an application for the siting, construction, expansion, or operation of an LNG terminal.”).

¹⁴³ The Department of Energy has approved 18 of these projects and is reviewing 38 more. LONG TERM APPLICATIONS RECEIVED BY DOE/FE TO EXPORT DOMESTICALLY PRODUCED LNG FROM THE LOWER-48 STATES (AS OF MARCH 18, 2016) 1–6 (2016), <http://energy.gov/sites/prod/files/2016/03/f30/Summary%20of%20LNG%20Export%20Applications.pdf> [<https://perma.cc/L8UR-4CSH>].

increased natural gas production enabled by these new transport facilities.¹⁴⁴ During the Obama Administration, this led to increasingly high profile interagency conflicts with the Environmental Protection Agency, which believes that FERC should provide full reviews of the upstream and downstream impacts of natural gas projects.¹⁴⁵

FERC's reluctance to consider upstream and downstream emissions related to new natural gas transport projects, however, may be little comfort to investors pursuing multibillion dollar, multidecade projects.¹⁴⁶ After all, the rules of the Keystone XL review changed in the middle of the environmental assessment process and FERC has never explained why the reasoning applied in that case might not be applied to natural gas projects. The most realistic rationale may be that while President Obama repeatedly indicated that he was skeptical of Canadian oil,¹⁴⁷ the government did, at times, champion the U.S. natural gas industry.¹⁴⁸

¹⁴⁴ See *Sierra Club v. Fed. Energy Regulatory Comm'n*, 827 F.3d 59, 63 (D.C. Cir. 2016); *Sierra Club v. Fed. Energy Regulatory Comm'n*, 827 F.3d 36, 47 (D.C. Cir. 2016); *S. Coast Air Quality Mgmt. Dist. v. Fed. Energy Regulatory Comm'n*, 621 F.3d 1085, 1089–90 (9th Cir. 2010); *Burger & Wentz*, *supra* note 17, at 137 (“FERC has consistently maintained that it has no obligation to consider greenhouse emissions or any other environmental effects associated with upstream and downstream activities in the natural gas production and supply chain.”).

¹⁴⁵ Letter from U.S. Env'tl. Prot. Agency, *supra* note 50, at 2 (stating FERC's environmental review “perpetuates the significant emission” by not considering downstream impact and so “[w]e . . . request a headquarters level meeting with us to seek a definitive resolution to this matter before you [approve the pipelines] and so that you do not continue to take this approach in additional NEPA documents”); Letter from U.S. Env'tl. Prot. Agency, *supra* note 64, at 2–6 (on file with author) (FERC's environmental reviews of liquefied natural gas terminals must add assessment of “emissions associated with the production, transport, and combustion of the natural gas”). FERC's position has generally been supported by the other infrastructure and production approving agencies, such as the Army Corps of Engineers and the Bureau of Ocean and Energy Management. See BUREAU OF OCEAN & ENERGY MGMT., *supra* note 67, at 8–37 (rejecting consideration of upstream and downstream impacts for oil leases); *Coleman & Jordaan*, *supra* note 128, at 2–6.

¹⁴⁶ James W. Coleman, *Energy Market and Policy Revolutions: Regulatory Process and the Cost of Capital*, in *ENERGY LAW AND ECONOMICS* (Klaus Mathis ed., forthcoming Springer 2017).

¹⁴⁷ President Obama repeatedly responded to complaints from pipeline supporters by admonishing them to remember “this is Canadian oil, this isn't U.S. oil.” *Transcript: President Obama's Nov. 5 News Conference on Midterm Election Results*, WASH. POST (Nov. 5, 2014), https://www.washingtonpost.com/politics/transcript-president-obamas-remarks-on-midterm-election-results/2014/11/05/491a02b2-6524-11e4-9fdc-d43b053ecb4d_story.html?utm_term=.71d0106e1537 [<https://perma.cc/2QXX-XPSQ>]; see also Kessler, *supra* note 74 (“I've already said I'm happy to look at how we can increase pipeline production for U.S. oil, but Keystone is for Canadian oil to send that down to the Gulf.”).

¹⁴⁸ Denise Garcia, *A 'Real' Natural Gas Revolution in the US: Moniz*, CNBC (Feb. 24, 2016), <https://www.cnbc.com/2016/02/24/a-real-natural-gas-revolution-in-the-us-moniz.html> [<https://perma.cc/GZ98-JML3>] (United States Secretary of Energy Moniz praising U.S. potential to be a major natural gas producer and exporter).

Yet if the procedural requirements for transport project assessments depend on the political winds, there are some preliminary signs that natural gas may no longer have those winds at its back. The Obama administration's final climate plan for U.S. electricity production sharply cut back on the role that it envisioned for natural gas in the future U.S. electricity mix.¹⁴⁹ The United States has also begun to crack down on methane emissions from natural gas production.¹⁵⁰ And, in a shock to many, the Federal Energy Regulatory Commission recently rejected a natural gas pipeline designed to serve an Oregon liquefied natural gas facility on the basis that there was no need for the facility—effectively killing the facility itself, which it had approved in an earlier decision.¹⁵¹ At the same time, state governments have pushed for a larger role in assessing natural gas projects and the Environmental Protection Agency and environmental groups have continued their lobbying for expanded environmental assessments.¹⁵²

Finally, on February 3, 2017, an outgoing commissioner of FERC, Norman Bay, effectively endorsed these outside arguments for wider environmental assessments.¹⁵³ This argument came in a separate statement to an otherwise uncontroversial pipeline approval.¹⁵⁴ Commissioner Bay continued to insist that NEPA does not require FERC to assess upstream and downstream emissions from gas pipelines, noting that “FERC has no authority to regulate the production of natural gas” because “in general, that authority resides with the states.”¹⁵⁵ Nevertheless, “in light of the heightened public interest and in the interests of good government,” Commissioner Bay believed that the Commission should begin studying the impacts of increased upstream emissions and the downstream impact of natural gas.¹⁵⁶ Thus, natural gas transport projects may well be the next industry to experience expanded environmental assessments.

¹⁴⁹ Barry Jopson, *Shale Gas Is Loser in Obama Climate Plan*, FIN. TIMES (Aug. 3, 2015), <https://www.ft.com/content/19ec1de4-39fa-11e5-8613-07d16aad2152> [<https://perma.cc/6SSS-FDMX>].

¹⁵⁰ Oil and Natural Gas Sector: Emission Standards for New and Modified Sources, 80 Fed. Reg. 56,593 (Sept. 18, 2015). The Trump administration's attempts to delay enforcement of these standards were rejected by the D.C. Circuit. *Clean Air Council v. Pruitt*, 862 F.3d 1 (D.C. Cir. 2017).

¹⁵¹ U.S. Fed. Energy Regulatory Comm'n, Order Denying Applications for Certificate and Section 3 Authorization, 154 FERC ¶ 61,190 (Mar. 11, 2016); see also *U.S. Rejects Multibillion-Dollar Jordan Cove Gas Export Plan*, BUNKER PORTS NEWS WORLDWIDE (Mar. 14, 2016), <http://www.bunkerportsnews.com/News.aspx?ElementID=c44f8870-6cb7-4b3b-95f6-19c2d9bcdfe3> [<https://perma.cc/34V3-VLEJ>] (noting that “little or no evidence of the need” for the pipeline was shown).

¹⁵² Coleman, *supra* note 62, at 1367.

¹⁵³ Fed. Energy Reg. Comm., Order Granting Abandonment and Issuing Certificates, 158 FERC ¶ 61,145 (Feb. 3, 2017).

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

C. Coal Exports

Environmental reviews of coal export facilities have been just as inconsistent and contentious as reviews of oil and gas transport. Despite the association of coal production with eastern states like West Virginia, the leading coal producing state is Wyoming and nearly half of U.S. coal production is from the Powder River Basin in Wyoming and Montana.¹⁵⁷ As a result of declining domestic use, coal producers are looking to export this coal to Asian markets that keep demanding more coal.¹⁵⁸ This requires port terminals for coal export: the two most prominent proposals are the Millennium Bulk Logistics Longview Terminal in Longview, Washington and the “Gateway Pacific Terminal” at Cherry Point near Ferndale, Washington.¹⁵⁹ The Army Corps, which approves these facilities, has said that its environmental review will not consider the environmental impact of “burning of coal overseas” because those events are “outside the Corps’ control and responsibility.”¹⁶⁰

The State of Washington, however, is performing its own environmental assessment of the Longview Terminal, which does consider the greenhouse gas emissions from “end-use coal combustion.”¹⁶¹ Thus the Longview Terminal creates an anomalous situation in which a U.S. state, but not the federal government, is focusing its environmental review on energy markets in other countries. If federal environmental reviews should avoid asserting the power to control consumption in other

¹⁵⁷ U.S. Energy Info. Admin., *Frequently Asked Questions: Which States Produce the Most Coal?*, EIA.GOV, <https://www.eia.gov/tools/faqs/faq.php?id=69&t=2> [<https://perma.cc/4JFE-YJ2B>] (last updated Feb. 28, 2017).

¹⁵⁸ Coleman, *supra* note 62, at 1366, n.49.

¹⁵⁹ U.S. Energy Abundance: Regulatory, Market, and Legal Barriers to Export: Hearing Before the Subcommittee on Energy and Power of the Committee on Energy and Commerce, House of Representatives, 113th Cong. 9-21 (2013) (statement of Jennifer Moyer, Acting Chief, Regulatory Program, U.S. Army Corps of Engineers). At one time, there were more coal export facilities planned from terminals in Washington and Oregon, but many of these projects have been shelved. Scott Learn, *Port of Coos Bay Coal-Export Proposal Ends After 18 Months of Work*, OREGONIAN (Apr. 1, 2013), http://www.oregonlive.com/environment/index.ssf/2013/04/port_of_coos_bay_coal-export_p.html [<https://perma.cc/PNW6-LA62>]; Kim Murphy, *Plans Shelved for Coal Export Terminal in Oregon*, L.A. TIMES (May 8, 2013), <http://articles.latimes.com/2013/may/08/nation/la-na-nn-coal-export-oregon-20130508> [<https://perma.cc/FYT5-Q8DK>]; The Associated Press, *Rail Company Shelving Coal Export Plans for Hoquiam Port*, SEATTLE TIMES (Aug. 14, 2012), <https://www.seattletimes.com/seattle-news/company-shelves-hoquiam-coal-export-plan/> [<https://perma.cc/FN6E-THZU>].

¹⁶⁰ Moyer, *supra* note 159, at 10.

¹⁶¹ WASH. STATE DEP’T OF ECOLOGY, DRAFT ENVIRONMENTAL IMPACT STATEMENT S-9 (2016), http://www.millenniumbulkeisw.gov/assets/00_mbt_l_sepa_deis_ch00_summary_web.pdf [<https://perma.cc/582E-2KBR>] (“Climate change concerns included impacts as a result of combustion of fossil fuels at coal power plants overseas”); Millennium Bulk Terminals-Longview, *Frequently Asked Questions*, <http://www.millenniumbulkeisw.gov/frequently-asked-questions.html> [<https://perma.cc/4HYF-F383>] (last visited Aug. 5, 2017).

countries,¹⁶² then presumably the same principle should apply *a fortiori* to state environmental reviews. On the other hand, Washington will not consider local environmental impacts in Asia from burning coal shipped from Longview Terminal, presumably because those air impacts have only a minimal impact on Washington air quality.¹⁶³

Coal exports might seem like the easiest case for reviewing the downstream impact of an energy transport project. Coal combustion produces more carbon dioxide pollution than any other fuel used in the United States,¹⁶⁴ so encouraging more coal combustion might seem like an unmitigated environmental bad. The counterarguments of the coal industry, however, illustrate how difficult it can be to assess the downstream impacts of energy transport.¹⁶⁵

First, the coal industry argues that U.S. coal exports will not increase global consumption of solid fuels—instead, they will simply replace other solid fuels.¹⁶⁶ Second, it argues that importing countries will use low sulfur, high efficiency U.S. coal to replace low grade domestic coal that burns even dirtier.¹⁶⁷ Third, it argues that, in some countries, citizens must rely on burning biomass such as wood and animal dung for heat, which produces more air pollution than any kind of coal, making U.S. exports an environmental boon.¹⁶⁸ Of course, environmental groups contest each of these points, and also note that cheap U.S. coal exports delay a transition to

¹⁶² Exec. Order No. 12114, 44 Fed. Reg. 1957 (Jan. 4, 1979) (limiting environmental review of U.S. exports used abroad to consideration of “a product, or physical project producing a principal product or an emission or effluent, which is prohibited or strictly regulated by Federal law in the United States because its toxic effects on the environment create a serious public health risk.”).

¹⁶³ Millenium Bulk, *supra* note 161 (“The analysis does NOT include evaluating environmental impacts within any country importing the coal.”). Greenhouse gas emissions have the same climate impact regardless of whether the coal is burned in the United States or across the globe in Asian countries importing U.S. coal. But even conventional pollutants such as particulate matter are increasingly reaching the United States from sources across the Pacific Ocean in China. See M. Huang et al., *Impacts of Transported Background Pollutants on Summertime Western US Air Quality: Model Evaluation, Sensitivity Analysis and Data Assimilation*, 13 ATMOSPHERIC CHEMISTRY & PHYSICS 359, 360 (2013).

¹⁶⁴ A. R. Brandt et al., *Methane Leaks from North American Natural Gas Systems*, 343 SCIENCE 733, 733–35 (2014); U.S. Energy Info. Admin., *Frequently Asked Questions: How Much Carbon Dioxide Is Produced When Different Fuels Are Burned?*, EIA.GOV, <https://www.eia.gov/tools/faqs/faq.php?id=73&t=11> [<https://perma.cc/C7SR-SGVQ>] (last updated June 8, 2017).

¹⁶⁵ NAT’L RESEARCH COUNCIL, COAL: RESEARCH AND DEVELOPMENT TO SUPPORT NATIONAL ENERGY POLICY 4–5 (2007).

¹⁶⁶ See Lisa Palmer, *Facing Tough Market at Home, U.S. Coal Giant Pushes Overseas*, YALE ENV’T 360 (July 29, 2013), http://e360.yale.edu/feature/facing_tough_market_coal_giant_peabody_energy_pushes_overseas/2676/ [<https://perma.cc/RW5A-NG8Z>].

¹⁶⁷ *Id.*

¹⁶⁸ UNITED NATIONS ENV’T PROGRAMME, GEO YEAR BOOK 2006 44–46 (2006).

cleaner fuels that would improve the environment in importing countries.¹⁶⁹ But the coal industry arguments demonstrate how complex and contested any environmental review of downstream impacts of energy transport facilities would eventually become.

D. Electricity Transmission

If the United States is to meet its goals for transforming the power sector, it will require a massive and expensive build out of electricity transmission. One tenth of all capital investment in the United States goes to the power industry.¹⁷⁰ The U.S. electric grid is worth nearly a trillion dollars¹⁷¹ and will require another trillion dollars of investment merely to maintain the current level of service.¹⁷² Expanding wind and solar power will require further ramping up of this investment. For one, wind and solar power is often strongest in desert and prairie regions far from urban demand.¹⁷³ For another, wind and solar power are not dispatchable sources of electricity—that is, they cannot operate on demand but only provide power when the wind is blowing or the sun shining—so they may require extra interregional transmission to make up for local weather anomalies.¹⁷⁴

¹⁶⁹ Michael B. McElroy & Xi Lu, *Fracking's Future: Natural Gas, the Economy, and America's Energy Prospects*, HARVARD MAG., <http://harvardmagazine.com/2013/01/frackings-future> [https://perma.cc/ZJZ2-3FNS] (last visited Aug. 5, 2017).

¹⁷⁰ DANIEL YERGIN, *THE QUEST: ENERGY, SECURITY AND THE REMAKING OF THE MODERN WORLD* 398 (2011) (“Electric power is a classically long-term business. A power plant built today may be operating 60 to 70 years from now. It is also a big-ticket business—in fact, it is the most capital-intensive major industry in the United States. Fully 10 percent of all capital investment in the United States is embedded in the power plants, transmission lines, substations, poles, and wires that altogether make up the power infrastructure.”).

¹⁷¹ Alexandra B. Klass & Jim Rossi, *Revitalizing Dormant Commerce Clause Review for Interstate Coordination*, 100 MINN. L. REV. 129, 140–41 (2015) (“The U.S. electric grid constitutes an \$876 billion asset managed by over 3,000 utilities serving nearly 300 million customers.”).

¹⁷² *Id.* at 142 (“[I]n order to maintain even current levels of grid reliability, the electric industry must make . . . investments in transmission and distribution alone of nearly \$900 billion.”).

¹⁷³ Ashley C. Brown & Jim Rossi, *Siting Transmission Lines in a Changed Milieu: Evolving Notions of the “Public Interest” in Balancing State and Regional Considerations*, 81 U. COLO. L. REV. 705, 711 (2010). This sort of long distance directional power transfer is encouraging a transition to a direct current model for power transmission instead of the regular two way alternating current. Alexandra B. Klass, *Takings and Transmission*, 91 N.C. L. REV. 1079, 111 n.196 (2013) (“Today, new, high-voltage DC (‘HVDC’) lines are often proposed as the most efficient and economical method of transporting wind power long distances.”).

¹⁷⁴ Hari M. Osofsky & Hannah J. Wiseman, *Hybrid Energy Governance*, 2014 U. ILL. L. REV. 1, 44–52 (2014).

Such massive capital investments are particularly vulnerable to the kind of uncertainty created by shifting rules of environmental assessment.¹⁷⁵ Of course, it might seem that transmission presents the happy flip side of the contentious debates over fossil fuel transport. After all, new transmission lines could benefit the renewable industry upstream and could clean the air downstream by replacing dirtier sources such as coal plants that are often located near urban centers.¹⁷⁶ Indeed, the Federal Energy Regulatory Commission has mandated that when states make transmission decisions they must consider how their decisions will impact the ability of neighboring states to meet their renewable targets.¹⁷⁷

But there is no reason to think that electric transmission will be uniquely immune from the uncertainties and delay caused by expanded and uncertain environmental assessments. First of all, power transmission has historically attracted *more* opposition than oil and gas pipelines because transmission is above the ground, leaving a permanent eyesore.¹⁷⁸ Second, the renewable projects themselves often attract local opposition driven by the effects of large solar and wind facilities on sensitive species, local land use, and aesthetic values.¹⁷⁹ These opponents of wind and solar projects will use the same tactics employed in pipeline debates: even a project that

¹⁷⁵ M.S. Reed et al., *Combining Analytical Frameworks to Assess Livelihood Vulnerability to Climate Change and Analyse Adaptation Options*, 94 ECOLOGICAL ECON. 66, 68–69 (2013).

¹⁷⁶ Coleman, *supra* note 62, at 1378 (“For example, a transmission line from in-state windmills to out-of-state consumers could also provide those consumers with cleaner air if it displaced local coal power.”).

¹⁷⁷ Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, 76 Fed. Reg. 49842-01 (Aug. 11, 2011). States making decisions about siting power generation facilities must consider likely transmission decisions in other states. See Uma Outka, *Environmental Law and Fossil Fuels: Barriers to Renewable Energy*, 65 VAND. L. REV. 1679, 1692 n.45 (2012); Amy L. Stein, *The Tipping Point of Federalism*, 45 CONN. L. REV. 217, 245–46 (2012) (exploring the disparity between electricity generation siting which nominally remains in state control and siting regimes governing electricity and natural gas transmission).

¹⁷⁸ Lita Furby et al., *Public Perceptions of Electric Power Transmission Lines*, 8 J. ENVTL. PSYCHOL. 19, 20 (1988) (“Transmission lines currently represent a problem area in the electric power system: they require considerable land for their corridors, and the use of that land for transmission lines may conflict with other land use practices or plans; they cause noise; they are perceived as visually unattractive; and they are perceived to cause health problems and safety risks for both animals and humans. As a result, high-voltage transmission lines have recently met a very significant amount of public opposition. . . . Opposition to transmission line siting and construction has sometimes caused enormous costs to the utilities, through long delays in gaining regulatory approval, litigation fees, and occasionally even vandalism.”).

¹⁷⁹ Patrick Devine-Wright, *Reconsidering Public Attitudes and Public Acceptance of Renewable Energy Technologies: A Critical Review* 3 (Econ. & Social Research Council, Working Paper No. 1.4, 2007), http://geography.exeter.ac.uk/beyond_nimbyism/deliverables/bn_wp1_4.pdf [<https://perma.cc/6RB9-57SY>] (discussing “widespread local opposition towards renewable energy developments, particularly wind and biomass.”).

has received site approvals will never be built if it cannot connect to centers of demand.¹⁸⁰ With an expanded environmental impact assessment, the transmission approval process will provide another opportunity to relitigate familiar disputes that wind turbines endanger bird populations and damage scenic vistas or that solar farms have impacts on water use, land use, and endangered species.¹⁸¹

Transmission opponents can and will add arguments that all the downstream economic activity that is served by electricity has negative impacts on the environment, or that the power transmission, which is open to all users, will be diverted to serve fossil fuel power plants.¹⁸² And the arguments for considering upstream and downstream consequences of electricity transmission are, if anything, more reasonable than the same case for oil pipelines: oil can go by rail, ship, or pipeline; electric power can only go by transmission lines.¹⁸³ Thus, renewable power is, if anything, more vulnerable than oil production to delay by environmental review of transport tactics.

IV. U.S. ENVIRONMENTAL REVIEWS OF FOREIGN ENERGY MARKETS ENCROACH ON THE JURISDICTION OF ITS ENERGY TRADING PARTNERS

Environmental reviews of domestic energy transport infrastructure contain an awkward implication when they focus on how that infrastructure will impact global markets: if the United States rejects or approves a pipeline or a liquefied natural gas facility because it will change foreign energy markets, then the United States is, by implication, asserting the power and the right to alter energy markets in another country. Of course, from a fully realist perspective, any regulatory approval, or any

¹⁸⁰ David Brooks, *What Does the Quick Approval of a Vermont Power Line Say about Northern Pass?*, CONCORD MONITOR (Jan. 8, 2016), <http://www.concordmonitor.com/Archive/2016/01/vermontElectricity-cm-010816> [<https://perma.cc/3Z36-4EQC>] (noting that environmental groups oppose transmission to bring hydropower into New England because “reservoirs displaced native peoples and swamped ecosystems covering hundreds of square miles, including an infamous 1984 drowning of some 10,000 caribou during a water release from a dam.”).

¹⁸¹ *Bird Conservation Group Challenges Feds over Wind Farm Eagle Deaths*, FOX NEWS (May 2, 2014), <http://www.foxnews.com/politics/2014/05/02/bird-conservation-group-challenges-feds-over-wind-farm-eagle-deaths.html> [<https://perma.cc/R4Q3-XSQ2>]; Todd Woody, *Solar Energy Faces Tests on Greenness*, N.Y. TIMES (Feb. 23, 2011), <http://www.nytimes.com/2011/02/24/business/energy-environment/24solar.html> [<https://perma.cc/S9YJ-7ELY>].

¹⁸² Adam Orford, *Power to the People: Primer on NEPA and Transmission Lines*, 29 NAT. GAS & ELECTRICITY 16, 21 (2013) (“Perhaps most commonly, today’s transmission opponents may argue that the agency should review and disclose the impacts of induced energy generation as an ‘indirect effect.’”).

¹⁸³ U.S. Energy Info. Admin., *Electricity Explained: How Electricity Is Delivered to Consumers*, EIC.GOV, https://www.eia.gov/Energyexplained/index.cfm?page=electricity_delivery [<https://perma.cc/K2AQ-QCGT>] (last updated Aug. 31, 2017).

regulation, may have an impact on global markets because supply and demand disperses price signals across international borders.¹⁸⁴ What is different about upstream and downstream environmental reviews of energy transport is that they explicitly purport to measure how a U.S. government action will affect its trading partners and then make that effect *a basis* for the United States' decision.¹⁸⁵ This assertion is an unusually explicit encroachment on U.S. trading partners' authority to achieve a balance between environmental and economic concerns in regulating their own energy markets.

Of course, the United States has an unusually strong interest in greenhouse gas emissions abroad because these gases are well mixed in the atmosphere so that, unlike conventional pollutants, emissions abroad cause just as much harm as domestic emissions.¹⁸⁶ And perhaps countries around the world will move to new models of sovereignty and trade law that recognize some kind of shared jurisdiction to monitor and discourage greenhouse gas emissions associated with domestic industries. But for now, while nations have proven willing to pledge domestic action to meet global climate goals, they have continued to assert their fundamental authority to choose how to regulate their domestic energy industries and how much to sacrifice to help the world limit climate change.¹⁸⁷

¹⁸⁴ A famous example of this is the "California effect" in which global manufacturers upgrade a product to ensure that it will meet standards developed in a high regulation state like California. DAVID VOGEL, *TRADING UP: CONSUMER AND ENVIRONMENTAL REGULATION IN A GLOBAL ECONOMY* 248 (1995) (using the term "California effect" to describe how California's regulatory innovation has spread to other states through national trade); *see also* Coleman, *supra* note 62, at 1359–60 n.8 (distinguishing such regulations, which merely have an incidental effect on other jurisdictions, from those that explicitly regulate production methods in other jurisdictions).

¹⁸⁵ Coleman, *supra* note 62, at 1385–86 n.169. Of course, merely studying greenhouse gas emissions in other countries need not encroach on other countries' jurisdiction, if U.S. regulators never made a decision on the basis of such studies. *See* *Vt. Yankee Nuclear Power Corp. v. Nat. Res. Def. Council, Inc.*, 435 U.S. 519, 558 (1978) ("NEPA does set forth significant substantive goals for the Nation, but its mandate to the agencies is essentially procedural.") (citations omitted). But if these analyses would never tip the balance on a project approval, then they should not be part of an environmental impact statement under the Supreme Court's interpretation of NEPA. *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 767–68 (2004).

¹⁸⁶ COMMITTEE ON THE SCI. OF CLIMATE CHANGE, NAT'L RESEARCH COUNCIL, *CLIMATE CHANGE SCIENCE: AN ANALYSIS OF SOME KEY QUESTIONS* 10–11 (2001); James W. Coleman, *Unilateral Climate Regulation*, 38 HARV. ENVTL. L. REV. 87, 107–08 (2014) (describing why climate regulators must take particular care that their regulations avoid encouraging carbon emissions overseas). This aspect of the carbon problem does suggest that upstream reviews of greenhouse gas emissions in other jurisdictions are less unreasonable than upstream review of other foreign pollution.

¹⁸⁷ Coleman, *supra* note 186, at 104–05 n.72 (describing persistent disagreement between countries on how much each country should control its emissions). Under current trade law, nations may not attach conditions to domestic sales that attempt to control the "process and production methods" of their trading partners—that is, countries generally cannot use

If U.S. trading partners believe that they should be able to choose their own energy policies, how will they react to U.S. assertions that it can choose for them? Consider the former President's statements on the Keystone XL pipeline: he directed the State Department to reject the pipeline if it encouraged Canadian oil production,¹⁸⁸ emphasizing that he would encourage American oil production instead.¹⁸⁹ This will end in trade wars: if the Keystone XL precedent is applied to all energy transport reviews, the result will be regular official policy statements of the U.S. government that reject energy export facilities on the stated basis that these rejections will help slow manufacturing in China, natural gas power in Europe, and coal power production in the developing world. Needless to say, these are interests that each of these other countries feel are vital to their economic and physical security. Although some nationalists and environmentalists may consider trade wars to be a benefit,¹⁹⁰ it would seem perverse for the National Environmental Policy Act to become a catalyst for such global friction.¹⁹¹

This is not to say that the United States should not be concerned with environmental policies abroad. There are several avenues for influencing environmental regulation in U.S. trading partners such as diplomacy, multilateral agreements like the Montreal Protocol,¹⁹² and multilateral bodies such as the Commission for Environmental Cooperation.¹⁹³ The question is whether asserting the power and the authority to unilaterally alter energy markets in other countries through environmental

import restrictions to encourage other countries to move to favored modes of production—unless these conditions are deemed both environmentally justified and procedurally fair to producing countries. General Agreement on Tariffs and Trade art. I, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194; Steve Charnovitz, *The Law of Environmental PPMs in the WTO: Debunking the Myth of Illegality*, 27 YALE J. INT'L L. 59, 101-02 (2002).

¹⁸⁸ See *supra* text accompanying note 58.

¹⁸⁹ Kessler, *supra* note 74 (“I’ve already said I’m happy to look at how we can increase pipeline production for U.S. oil, but Keystone is for Canadian oil to send that down to the Gulf.”).

¹⁹⁰ Daniel C. Esty, *Bridging the Trade-Environment Divide*, 15 J. ECON. PERSP. 113, 116 (2001) (“Certain environmentalists will always be opposed to trade liberalization because they adhere to a ‘limits to growth’ philosophy.”).

¹⁹¹ Note that this focus on foreign emissions is the opposite of normal consideration of environmental effects abroad, which often look at how domestic emissions might hurt people in foreign countries. 42 U.S.C. § 7415(a) (2017) (allowing regulation if “any air pollutant or pollutants emitted in the United States cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare in a foreign country”).

¹⁹² Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, S. Treaty Doc. NO. 100-10, 1522 U.N.T.S. 3.

¹⁹³ Created by the North American Agreement on Environmental Cooperation, a side treaty to the North American Free Trade Agreement, the Commission for Environmental Cooperation monitors environmental regulation in Canada, the United States, and Mexico. COMMISSION FOR ENV. COOPERATION, 2013 ANNUAL REPORT 2 (2014), http://www.cec.org/sites/default/files/documents/annual_reports/annual-report-2013-en.pdf [https://perma.cc/2UNZ-ESYF].

reviews of transport infrastructure is a useful addition to those other methods of influencing environmental regulation abroad.

Ultimately, this assertion is an undiplomatic invitation to conflict in energy trade.¹⁹⁴ As the State Department's review of the Keystone XL pipeline made plain, even the most thorough and well intentioned review of the foreign impacts of a domestic pipeline results in tenuous and contested conclusions. The best modeling still requires innumerable assumptions and estimations, each of which could easily be contested in a conflict between trading partners.¹⁹⁵ And if countries began shading their reviews in service of their domestic industries, the complexity of these assessments could be a cloak for protectionism.

There are some preliminary indications that jurisdictions do choose assumptions and estimations that will cast their domestic industry in a favorable light.¹⁹⁶ The most common trick is to assume that domestic exports of fossil fuels will replace even dirtier fossil fuels abroad. For example, U.S. officials, including Secretary of Energy Ernest Moniz, have consistently asserted that liquefied natural gas from the United States will lower global greenhouse gas emissions by replacing coal combustion in other countries.¹⁹⁷ This is not an unreasonable position: coal dominates electricity production in many countries that are looking to import more liquefied natural gas, and natural gas is a good replacement for coal because, unlike wind and solar power, it is a reliable source of electricity.¹⁹⁸ But environmental groups opposed to gas exports have a reasonable response: when countries install new electric generation capacity, they are more likely to choose cleaner sources such as solar and wind, so natural gas imports are delaying a transition to cleaner renewable sources.¹⁹⁹ So far, U.S. regulators seem to be ignoring this response: the Department

¹⁹⁴ This is even truer when, as in Washington State's review of the Millenium Longview terminal, a U.S. state asserts that it should be able to review the consequences of allowing increased coal use in the nation's sovereign energy trading partners. WASH. STATE DEP'T OF ECOLOGY, *supra* note 161, at S-9 ("Climate change concerns included impacts as a result of combustion of fossil fuels at coal power plants overseas.").

¹⁹⁵ The U.S. government's decision on Keystone XL has been challenged by TransCanada on exactly these grounds as discrimination and expropriation in violation of the North American Free Trade Agreement. Ian Austen, *TransCanada Seeks \$15 Billion from U.S. over Keystone XL Pipeline*, N.Y. TIMES (Jan. 6, 2016), <https://www.nytimes.com/2016/01/07/business/international/transcanada-to-sue-us-for-blocking-keystone-xl-pipeline.html> [<https://perma.cc/DKR3-2UAY>]; James W. Coleman, *TransCanada Sues U.S. Government for Rejecting Keystone XL Pipeline*, ENERGY LAW PROFESSOR (Jan. 9, 2016), <http://www.energylawprof.com/?p=691> [<https://perma.cc/2T2J-E6WY>].

¹⁹⁶ See Ken Silverstein, *Energy Secretary Moniz Signals LNG Exports Will Soon Get Moving*, FORBES (June 15, 2013), <https://www.forbes.com/sites/kensilverstein/2013/06/15/energy-secretary-moniz-signals-lng-exports-will-soon-get-moving/#7c6b0a1a2af9> [<https://perma.cc/GYT2-XCUE>].

¹⁹⁷ *Id.*

¹⁹⁸ Coleman & Jordaan, *supra* note 128, at 4-5.

¹⁹⁹ *Id.*; *China Delivers Global Record Wind and Solar Installs While National Coal Consumption Drops*, INST. FOR ENERGY ECON. & FIN. ANALYSIS (Feb. 29, 2016),

of Energy's principal study on the downstream impact of gas exports only compared gas exports to other fossil fuels such as coal.²⁰⁰

In fact, the United States has been as creative and effective as any industry trade group in promoting plausible but controversial theories for how its fossil fuel exports are uniquely suited to cut pollution abroad. For example, before the United States finally dropped its crude oil export ban, the United States Energy Information Administration posted a briefing making the case that sending more U.S. oil to Mexico could, counterintuitively, lower pollution in Mexico.²⁰¹ It argued that, due to the special characteristics of Mexican oil refineries, they would be able to produce more low sulfur gasoline if they were able to use light crude oil from the United States instead of heavy, sulfurous oil from Mexico.²⁰² Again, the argument is plausible, but nearly any fossil fuel export can be justified if it is compared exclusively to a dirtier competitor.

Thus, environmental reviews of energy transport projects are a recipe for energy trade conflict in two ways: they will result in regular government statements that the intent of the review process is to hamper energy markets abroad; and, they will encourage conflicting environmental analyses that will be used to justify and resist trade restrictions.²⁰³ In the end, the best view is the one stated in Executive Order 12114 and articulated by the State Department in its review of the original Keystone pipeline: U.S. environmental reviews should not cover energy production that is regulated by other countries.²⁰⁴

Even when the energy transport project is designed to serve domestic, rather than global, energy markets, expanded reviews inevitably produce interjurisdictional tensions. Take the example of the Dakota Access pipeline. Historically, states have

<http://ieefa.org/china-delivers-global-record-win-and-solar-installs-while-national-consumption-drops-3-7-percent-in-2015/> [<https://perma.cc/3KWW-H9JN>].

²⁰⁰ TIMOTHY J. SKONE ET AL., U.S. DEP'T OF ENERGY, *LIFE CYCLE GREENHOUSE GAS PERSPECTIVE ON EXPORTING LIQUEFIED NATURAL GAS FROM THE UNITED STATES 1* (2014), <https://energy.gov/sites/prod/files/2014/05/f16/Life%20Cycle%20GHG%20Perspective%20Report.pdf> [<https://perma.cc/RYN2-7CE3>].

²⁰¹ U.S. Energy Info. Admin., *Crude Oil Swaps with Mexico Could Provide Economic and Environmental Benefits*, EIA.GOV (Sept. 10, 2015), <https://www.eia.gov/to-dayinenergy/detail.cfm?id=22872> [<https://perma.cc/3KMU-CBXW>].

²⁰² *Id.*

²⁰³ Cliff L. Rothenstein & Stephen A. Martinko, *Conflicting Priorities Could Slow Environmental Reviews*, LAW360 (Jan. 4, 2016), <https://www.law360.com/articles/741036/conflicting-priorities-could-slow-environmental-reviews> [<https://perma.cc/NJ4K-E34L>].

²⁰⁴ Exec. Order No. 12114, 44 Fed. Reg. 1957 (Jan. 4, 1979) (limiting environmental review of U.S. exports used abroad to consideration of "a product, or physical project producing a principal product or an emission or effluent, which is prohibited or strictly regulated by Federal law in the United States because its toxic effects on the environment create a serious public health risk"); U.S. DEP'T OF STATE, *supra* note 3, at 54 ("Possible impacts of the construction or operation of the Keystone Pipeline in Canada are properly the subject of review by appropriate Canadian governmental entities.").

borne responsibility for oil pipeline siting.²⁰⁵ If the Army Corps had stuck by its December 2016 decision to perform a full federal environmental review of a domestic pipeline, it would have fundamentally altered the balance of power in oil transport federalism.²⁰⁶ States naturally would have objected to a federal takeover of their long standing authority to decide questions of oil pipeline siting. Thus, expanded environmental reviews of energy transport projects are just as likely to provoke domestic, as well as international, jurisdictional conflict.

V. CLARIFYING THE SCOPE OF ENVIRONMENTAL REVIEW OF ENERGY TRANSPORT

Courts and agencies should make plain that the upstream and downstream impacts of energy transport projects generally need not be assessed in NEPA reviews. Recall that the Supreme Court has said that agencies should consider indirect effects

²⁰⁵ Klass & Meinhardt, *supra* note 73, at 982–88, 1027–53 (noting varied approaches to oil pipeline siting in different states and collecting state statutes).

²⁰⁶ Memorandum from Jo-Ellen Darcy, *supra* note 83, at 3–4. A more limited reading of this memorandum could argue that, rather than announcing more federal review of all pipelines, it was merely intended for the specific situation in which “totality of the circumstances in this case” included “the involvement of historic tribal homelands, the close proximity to reservation lands . . . and potential impacts on treaty hunting and fishing rights.” *Id.* at 4. But that was not how the decision was presented by the federal government or environmental groups. Press Release, Joint Statement from the U.S. Dep’t of Justice, the Dep’t of the Army, and the Department of the Interior Regarding Standing Rock Sioux Tribe v. U.S. Army Corps of Eng’rs (Sept. 9, 2016), <https://www.justice.gov/opa/pr/joint-statement-department-justice-department-army-and-department-interior-regarding-standing-rock-sioux-tribe-v-u-s-army-corps-of-engineers> [https://perma.cc/9YBU-ZLGB] (“Furthermore this case has highlighted the need for a serious discussion on whether there should be nationwide reform with respect to considering tribes’ views on these types of infrastructure projects.”); *The Standing Rock Sioux Tribe’s Litigation on the Dakota Access Pipeline: Updates and Frequently Asked Questions*, EARTHJUSTICE, <http://earthjustice.org/features/faq-standing-rock-litigation> [https://perma.cc/A29C-GPME] (last updated Sept. 9, 2016) (interpreting the government’s joint statement as “call[ing] for a national review of the government’s approach to Tribal consultation for major fossil fuel projects”).

In January 2017, just before the end of the Obama administration, the three departments issued a report on their review of consultation with tribes on infrastructure decisions. DEP’T OF JUSTICE, DEP’T OF THE ARMY & THE DEP’T OF THE INTERIOR, IMPROVING TRIBAL CONSULTATION AND TRIBAL INVOLVEMENT IN FEDERAL INFRASTRUCTURE DECISIONS 2–5 (2017), <https://www.bia.gov/sites/bia.gov/files/assets/as-ia/pdf/indc2-060030.pdf> [https://perma.cc/6VGY-S7TU]. The tribes’ recommendations focused mostly on oil pipelines rather than infrastructure in general. *See, e.g., id.* at 15 (“Clarify the need to conduct an EIS for crude oil pipeline construction and operation.”); *id.* at 52 (“Tribes noted that the most problematic projects reviewed under the NHPA involve extractive industries (such as oil, natural gas and mining).”); *id.* at 65 (“Tribes similarly opposed the use of Nationwide Permits to authorize major infrastructure projects (particularly oil pipelines), which Tribes did not believe sufficiently safeguarded treaty rights.”). The government departments, however, did not distinguish between different kinds of infrastructure projects. *Id.* at 16–24.

of an action when (a) that consideration would be “useful[] . . . to the decisionmaking process”²⁰⁷ and (b) the agency action is the “proximate cause” of those effects, meaning that the agency bears legal responsibility for those actions or, as a matter of policy, should.²⁰⁸

First, expanded reviews simply do not provide useful information to the decisionmaking process.²⁰⁹ Even when regulators use state of the art models to estimate how new energy transport projects will affect energy production and consumption, they are unable to reach any useful conclusions: the results manage to be both too inconclusive to inform a decision and too precise to be plausible.²¹⁰ The end point of the State Department’s seven years of review was that the Keystone XL pipeline would (a) slightly lower greenhouse gas emissions if the price of oil was over \$75 per barrel, but (b) massively increase greenhouse gas emissions if the price was between \$65 and \$75 per barrel.²¹¹ Thus, the State Department could not even say whether (or by how much) the pipeline would increase or decrease greenhouse gas emissions or oil production, but it could project that everything depended on whether oil sold for \$75.01 or \$74.99 per barrel.²¹²

Furthermore, energy projects move on a timeline unsuited for the kind of lengthy reviews required to estimate upstream and downstream emissions. The procedure that is used to consider the upstream and downstream impacts of a source of energy is known as “life cycle” modeling, because it attempts to assess the impact of the fuel that is transported across its full life cycle, from extraction, through transport, to combustion by an end user.²¹³ In other words, this procedure attempts to measure how much greenhouse gas is emitted by producing, transporting, and burning each gallon of fuel.²¹⁴

This new tool, developed by scientists to study the impact of different energy sources, is increasingly used around the world, but relies on uncertain and contestable estimates that frequently result in controversial conclusions.²¹⁵ It was developed

²⁰⁷ *Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, 767 (2004).

²⁰⁸ *Id.* (quoting *W. KEETON ET AL., PROSSER AND KEETON ON LAW OF TORTS* 264, 274–75 (5th ed. 1984)).

²⁰⁹ *Welcome to the Future Energy Series*, ADVISIAN, <http://www.advisian.com/new-energyfuture#chapters> [<https://perma.cc/M96J-U9UN>] (last visited Aug. 5, 2017).

²¹⁰ *Id.*

²¹¹ U.S. DEP’T OF STATE, *supra* note 9, at 11.

²¹² And, of course, by the time that the State Department’s review was complete, oil sold for \$44 per barrel, far outside the range considered in the State Department study. See U.S. Energy Info. Admin., *supra* note 109 (showing that the price of oil in November 2015—when the State Department reached its decision—was \$44 per barrel).

²¹³ Coleman et al., *supra* note 126, at 1 (explaining how life cycle assessments are calculated and employed as “a quantitative tool used to estimate the environmental burdens from a product or process over its entire life cycle from materials extraction to waste disposal”).

²¹⁴ *Id.*

²¹⁵ Coleman & Jordaan, *supra* note 128, at 3 (“This tool is increasingly employed by regulators around the world, but, as with any model, it relies on uncertain estimates and

to answer general questions such as: when you consider farm emissions, is ethanol really cleaner than gasoline?²¹⁶ Or, when you consider the pollution to produce power, are electric cars really cleaner than gasoline?²¹⁷

But now federal regulators are being asked to apply this procedure, which is designed to answer questions about fuels in general—with difficulty—and apply it to questions about the global impact of a single pipeline, port facility, or energy transport project.²¹⁸ No wonder then, that the State Department's attempts to accomplish this were time consuming and fraught with controversy.²¹⁹ The problem is that energy markets will not wait for regulators to perfect their methodologies, so by the time the State Department completed its extensive analysis of the different effects of the Keystone pipeline given oil at \$74 or \$76 per barrel, oil was trading at \$44.²²⁰ Thus, the chance that the federal government could develop a new methodology for measuring these emissions, respond to public and interagency criticisms of that methodology, and reach a useful conclusion about the results in timely fashion is virtually nil.

The “proximate cause analysis” analogue that the Supreme Court employs for cabining environmental assessment, confirms that it would be unwise to expand energy transport reviews to include a climate test.²²¹ That analysis “turns on policy considerations and considerations of ‘legal responsibility’ of actors.”²²² Given the unlikelihood of producing useful information and the danger of collateral impact for international energy trade, it is hard to see how policy considerations could favor expanded review. And the “legal responsibility” prong may be the key to assessing the proper scope of NEPA reviews for energy projects: unless the upstream or downstream effects are the legal responsibility of the agency making a decision on an energy transport project, they likely should not be considered. For example, federal regulators should not use energy transport decisions to try and regulate energy production decisions that are the legal responsibility of other countries or of individual states. This rule would avoid the appearance of agency aggrandizement and, more

assumptions.”); Coleman, *supra* note 62, at 1393–94 (noting controversial life cycle studies, including one that suggested that, when one considers land use, wind power leads to more greenhouse gas emissions than fossil fuels).

²¹⁶ Coleman & Jordaan, *supra* note 128, at 3.

²¹⁷ *Id.*

²¹⁸ U.S. Fed. Energy Reg. Comm., Order Granting Abandonment and Issuing Certificates, 158 FERC ¶ 61,145 (Feb. 3, 2017), Separate Statement of Comm’r. Bay at *5 (“[T]he Commission should also be open to analyzing the downstream impacts of the use of natural gas and to performing a life-cycle greenhouse gas emissions study.”).

²¹⁹ Coleman and Jordaan, *supra* note 128, at 1–7.

²²⁰ U.S. DEP’T OF STATE, *supra* note 9, at 11. And note that these decisions are meant to summarize the market impacts of energy transport projects over decades to come—decades during which energy markets will continue to shift unpredictably.

²²¹ Dep’t of Transp. v. Pub. Citizen, 541 U.S. 752, 767 (2004) (quoting W. KEETON ET AL., PROSSER AND KEETON ON LAW OF TORTS 264, 274–75 (5th ed. 1984)).

²²² *Id.*

importantly, would eliminate the danger of environmental reviews provoking battles over international trade or federalism.

So when, if ever, should environmental reviews consider the upstream and downstream impacts of an energy transport project? The Supreme Court's two principles should, again, be a guide: federal agencies should only include consideration of upstream and downstream emissions in the rare case when (a) those impacts can be estimated with sufficient certainty that they provide useful information for the federal decisionmaker, and (b) the federal decisionmaker has authority over those impacts.²²³

For example, imagine that a company has proposed a short new road that will take coal from otherwise isolated federal lands that cannot otherwise be reached. That coal has no other path to market, so it will not be extracted unless the Bureau of Land Management approves both the proposed road and the coal mining.²²⁴ In such circumstances, the Bureau of Land Management's review of the road should include a review of the coal mine that will only be viable because of the road. The capacity of the road may give useful information about the rate of coal extraction and the Bureau is not infringing on any other agency or sovereign's authority to regulate coal mining on the property. So it would be appropriate to consider the upstream coal mine. On the other hand, even in this case, it would be useless and unwise to consider downstream consumption of coal, because once the coal is removed, it will disperse through national and international energy markets. In a case like this, environmental assessment should be, and likely would be, coordinated between the production and transport project—between the mine and the road—so that the road review is not an opportunity to relitigate an approval for the mine project.

The possibility of coordinated environmental reviews suggests another situation in which energy transport reviews could be coordinated with reviews of upstream or downstream production: agencies could coordinate their environmental reviews with the other agencies responsible for upstream or downstream decisions. For example, if a port authority on an island like Puerto Rico was considering a new terminal for oil import for power production, it could coordinate its environmental review with its utility regulator. In such an isolated market it might be possible to determine the downstream impact of the facility on oil power production on the island.

Apart from such exceptional circumstances, however, environmental assessments of energy transport projects do not provide helpful information to regulators, and needlessly delay new infrastructure while straining international relations. As the Keystone XL environmental impact statement makes clear, even if an agency devotes substantial time and expertise to such an assessment, it is very unlikely to produce helpful results. Predicting the impact of a single transport project requires

²²³ *Id.*

²²⁴ See Natural Gas Act of 1938, Pub. L. No. 75-688, 52 Stat. 821 (1938) (codified as amended at 15 U.S.C. § 717 (2012)).

too many assumptions and estimations to produce reliable results or constrain a regulator seeking a predetermined outcome. Thus, it fails to serve the principal goals of environmental assessment law: neither providing useful information to the public nor improving the quality of regulator's decisionmaking.²²⁵

On the other hand, there may be benefits in wider reviews of energy infrastructure, in general, rather than specific energy transport projects. For instance, if an agency like FERC did a careful study of what level of fossil fuel pipeline infrastructure buildout would likely be built if the country adopted an optimal carbon tax, or if the nation met its current greenhouse gas reduction goals, that study could be a relevant consideration in pipeline and transmission approvals.²²⁶ Giving due credit to the distributed knowledge reflected by markets,²²⁷ if the pipeline buildout was faster than anticipated, that could signal either that (1) the previous studies, like so many energy studies, had failed to predict market developments; (2) new pipelines should not be approved; or that (3) the country was not willing to abide by the strict limits reflected in theoretical commitments to price carbon or reduce emissions.²²⁸ Thus, these studies, unlike assessments of individual infrastructure, would be able to provide useful information because they would take advantage of existing lifecycle analysis's focus on large scale markets where more information may be a public good because of its wide benefits, rather than the project level decisions that are better studied by individual companies with money on the line.²²⁹ Again, these studies would likely not be a determinative factor in any review: inconsistencies between the study and infrastructure investment would be more likely to result from the study's necessary generality and forward looking nature.²³⁰ But, over time, they could be calibrated to improve the country's energy transport infrastructure forecasting.²³¹ In the meantime, such unprecedented and experiment reviews should not hold up energy investment.

²²⁵ A. Dan Tarlock, *Is There a There There in Environmental Law?*, 19 J. LAND USE & ENVTL. L. 213, 253 (2004).

²²⁶ *The Pipeline Link to Climate Change (and What's Being Done About It)*, ABOUT PIPELINES, <https://www.aboutpipelines.com/en/blog/the-pipeline-link-to-climate-change-and-whats-being-done-about-it/> [<https://perma.cc/XJ6B-YEW2>] (last visited Aug. 5, 2017).

²²⁷ See Scott Shane, *Prior Knowledge and the Discovery of Entrepreneurial Opportunities*, 11 ORG. SCI. 448, 448–49, 467 (2000).

²²⁸ *Id.*

²²⁹ At the moment, there is little reason to think that pipeline companies build projects that would not have been viable in a world where carbon was priced. After all, fossil fuel companies are more likely than any broad category of industry to make decisions based on the assumption that carbon will be priced in the future. See Letter from ExxonMobil on Energy & Carbon: Managing the Risks, to shareholders 16–18 (planning for carbon prices ranging from \$20/ton to above \$40/ton); Letter from JJ Traynor, Royal Dutch Shell plc, to Whom it May Concern 14 (May 16, 2014) (on file with author) (planning for \$40/ton carbon prices).

²³⁰ Letter from U.S. Env'tl. Prot. Agency, *supra* note 63, at 2.

²³¹ Coleman et al., *supra* note 126, at 7–11.

CONCLUSION: GETTING BEYOND THE PIPELINE WARS

The coming decades will determine the course of several energy transformations: new global markets in oil and gas serving growing demand centers in the developing world, new national markets in electricity bringing renewable power to urban demand centers, and new low carbon power sources driving a modern energy grid. Each of these transformations requires a massive buildout of new infrastructure and increased cooperation between regulators in competing jurisdictions. To navigate these transformations, the United States needs to ensure that its environmental assessment law does not throw up roadblocks to new energy transport facilities and to energy diplomacy. As the Keystone XL saga shows, shoehorning a review of global energy markets into already complex environmental assessments would not provide environmental benefits but would endanger energy diplomacy. Congress and the courts should ensure that environmental assessments stay within their appropriate scope.