

REBUILDING THE GRID: A TRANSBOUNDARY SOLUTION TO CLEAN ENERGY POLICY

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INTRODUCTION

It is nearly impossible to turn on a television or radio, pick up a newspaper or magazine, or visit a webpage without coming across some new story about how humans are destroying our planet. We are chided for relying so heavily on fossil fuels and urged to adopt eco-friendlier lifestyles. “Greenness” permeates all sectors of the market, from carpet cleaning services to “three-free” nail polish,¹ and this shift represents a change in consumer tastes as well as a heightened awareness of the environmental issues we face today.

Aside from a few holdouts, most experts and laypeople acknowledge that unchecked and irresponsible use of fossil fuels can contribute to the degradation of our environment. Even historically notorious polluters, such as chemical firms and the mining industry, have set sustainability goals and have initiated environmental programs intended to cut back their energy usage and decrease the amount of pollutants they produce. Despite consumers’ acceptance of green technologies, the United States’ producers have been hesitant to offer their full support. Balancing the environment and the economy is no easy task, and while many industries have enjoyed great success with their green solutions, one cross-section of the market has struggled under the weight of increasing regulation: the energy industry.

This Note examines America’s response to energy and environmental policy through the lens of the highly contested Clean Power Plan. Specifically, this Note drills into Section 111 of the Clean Air Act, the provision out of which the Clean Power Plan was born, and asks whether this language would permit the United States Environmental Protection Agency (EPA) to carry out the main principles of the Clean Power Plan even if this piece of legislation is overturned.

Using the Great Lakes Basin as a starting point and case study, this Note examines the historical and current importance of the region and how it is often disproportionately affected (both positively and negatively) by energy and environmental policy and argues that stronger federal regulation, like the kind outlined in the Clean Power Plan, is the wrong approach to energy policy in the United States. Specifically, the analysis scrutinizes the federal pressure to quickly adopt green technologies and energy sources, even though state infrastructure may be incapable of adequately handling these new technologies.

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1. Once the gold-standard among non-toxic nail polish, three-free refers to polish that does not contain dibutyl phthalate, formaldehyde, and toluene. Some department store brands now boast that they are five-free or seven-free, meaning that they are devoid of additional toxic chemicals commonly found in the product.

This Note proceeds in four sections. Section I of this Note serves as a primer on energy policy in the United States, starting with a brief historical overview and ultimately ending up at the Clean Air Act and Clean Power Plan. Specifically, this section discusses the historical development of the Clean Air Act, examines the current language of Section 111, and connects these pieces to the Clean Power Plan.

Section II surveys historical efforts and current trends in foreign environmental and energy policy. This part uses Germany as the “extreme” case study and explores Canada’s new energy strategy as a more moderate case study. This section illustrates the strategies that these countries are currently implementing in response to growing pressure to move toward energy sustainability. This section also discusses what the United States might learn from each of these strategies.

Section III analyzes the criticisms surrounding the Clean Power Plan. It asks and attempts to answer why industry groups, state governments, and even private citizens are against its provisions. This section also delves into Section 111 of the Clean Air Act and makes the argument that perhaps the Clean Power Plan’s goals might be implemented in much the same way under existing federal law, even without the specific piece of legislation.

Section IV attempts to find a middle ground between a national energy strategy and state control of power plants (including state control of *sources* of energy). This section poses two final questions: Could the United States and Canada create a shared energy strategy, and what would this look like?²

I. HISTORICAL BACKGROUND

Energy policy has “traditionally focused on the extraction and production of energy resources with specific goals of short-term efficiency and economic growth.”³

The field has substantively covered in general (1) electricity generation, transmission, and markets, including the laws governing the production, transportation, and sale of fuels used for electricity generation such as nuclear energy, coal, and natural gas; (2) the laws governing fuels used in transportation such as oil and biofuels; and, more recently (3) renewable energy including wind, solar, hydropower, and geothermal

2. See Sara L. Seck, *Energy in the Great Lakes Region: Imagining a Shared Strategy*, 39 CAN.-U.S. L.J. 20 (2015). This idea was recently toyed with at the Council of the Great Lakes Region (CGLR) Launch Conference. Sara L. Seck explores what a shared Great Lakes energy strategy might mean for the region. However, she does not provide commentary on what a shared energy strategy might look like in practice. This Note avoids a theoretical discussion of the “Anthropocene” and instead focuses on a hard, on-the-ground solution.

3. Alexandra Klass, *The Current State of Environmental Law: Part II: Essay: Climate Change and the Convergence of Environmental and Energy Law*, 24 FORDHAM ENVTL. LAW REV. 180, 185 (2013).

energy.⁴

In contrast, environmental law has “focused primarily on conservation and protection of land, water, air, species, and resources for purposes of protecting human health as well as for long-term preservation of environmental, culture, and aesthetic values.”⁵

On a structural level, environmental law did not grow out of economic regulation like energy law, but instead focused on risk assessment and the creation of regulatory tools to limit the environmental impacts of an industrialized society, leading to command-and-control regulation for industrial and other sources of pollution.⁶

While they are not wholly interrelated, it is almost impossible to talk about energy policy without talking about environmental policy, and the connections between these two. Indeed, environmental policy pervades the energy industry. For example, the Clean Air Act is primarily concerned with establishing ambient air quality standards and guarding against uncontrolled pollution, but the provisions in the law directly impact the energy industry by regulating emissions from (predominantly coal- and natural gas-fired) power plants.⁷ A similar link is found between energy and the Clean Water Act. In addition to regulating the amount of pollutants discharged into waters of the United States, the act creates a burdensome permit process that requires state-law compliance, federal-law compliance, state permission, and permission from the Federal Energy Regulatory Commission (FERC).⁸

This Section describes the development of the Clean Air Act, how it has evolved, what it currently says, and how it relates to the Clean Power Plan. Although much of this Section focuses on legislation, Subsection A also provides an overview of the importance of the Great Lakes Basin. This necessary context will prove significant in the Recommendations Section. Subsection B presents a brief historical overview of the Clean Air Act and, more specifically, explores Section 111. Subsection C goes on to discuss the development and possible fate of the Clean Power Plan through the lens of Section 111 of the Clean Air Act.

A. A Thirty-Thousand Foot View of the Great Lakes Basin

The Great Lakes Basin is an international region that includes parts of Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania, New

4. *Id.*

5. *Id.*

6. *Id.* at 185-86.

7. *Overview of the Clean Air Act and Pollution*, U.S. ENVTL. PROT. AGENCY (Jan. 13, 2017), <https://www.epa.gov/clean-air-act-overview> [<https://perma.cc/V754-4FCC>].

8. *See generally* Claudia Copeland, *Clean Water Act Section 401: Background and Issues*, CONG. RES. SERV. (July 2, 2015), <https://fas.org/sgp/crs/misc/97-488.pdf> [<https://perma.cc/PEZ4-DTFQ>].

York, Ontario, and Quebec.⁹ The area's picturesque landscape—which is home to over 3,500 different species of plants, animals, and aquatic life—is dotted with active smokestacks, blast furnaces, cooling towers, and industrial storage tanks.¹⁰ The sharp contrast between ecology and industry makes the region an interesting location for studying the intersection of environmental policy and economic development.

The Great Lakes-St. Lawrence Basin Sustainable Water Resources Agreement (“Agreement”) and subsequent Great Lakes Compact (“Compact”) further add to the area's uniqueness. These bi-national documents outline water management standards for the Great Lakes Basin. The Compact was established as a means to prevent the diversion of water from the Great Lakes and further protect the natural watersheds which surround them.¹¹ The Compact's primary purpose, as outlined in §1.3-2 is to protect the water in the Great Lakes from diversion and contamination, to protect the surrounding watersheds and ecosystems from destruction, and to further economic growth in the region.¹²

The Compact was signed into law in 2008 and is binding on the eight Great Lakes states and the United States government.¹³ The Agreement, which includes the Canadian provinces of Ontario and Quebec in addition to the Great Lakes states, is simply a good-faith agreement.¹⁴ The Agreement is designed as a Canadian supplement to the Compact; it is “not intended to incorporate the congressional approval necessary to elevate [its] status to that of interstate compact or international treaty.”¹⁵

The Great Lakes Basin is home to a growing technology sector and strong healthcare industry, in addition to retail trade, agriculture, and outdoor recreation (i.e. sport fishing and hunting).¹⁶ When combined, Canadian and United States gross domestic product (GDP) in the Great Lakes region adds up to \$4.7

9. *Membership*, GREAT LAKES-ST. LAWRENCE RIVER WATER RES. REG'L. BODY (October 8, 2016), <http://www.glsregionalbody.org/Membership.aspx> [<https://perma.cc/UV3T-CPCK>].

10. *About Our Great Lakes: Ecology*, NAT'L. OCEANIC AND ATMOSPHERIC ADMIN. GREAT LAKES ENVTL. RES. LAB. (Oct. 8, 2016) <https://www.glerl.noaa.gov/education/ourlakes/ecology.html> [<https://perma.cc/J5AZ-GSRA>].

11. *Agreements*, GREAT LAKES-ST. LAWRENCE RIVER WATER RES. COUNCIL (Oct. 10, 2016), <http://www.glscompactcouncil.org/Agreements.aspx> [<https://perma.cc/44XZ-NHMK>].

12. Great Lakes-St. Lawrence River Basin Water Resources Compact, SEC. 1.3, PART 2 (Dec. 2005).

13. *Implementation*, GREAT LAKES-ST. LAWRENCE RIVER WATER RES. REG'L. BODY (Oct. 10, 2016), <http://www.glsregionalbody.org/AgreementImplementationStatus.aspx> [<https://perma.cc/K8QT-SZ3R>].

14. Christine A. Klein, *Law of the Lakes: From Protectionism to Sustainability*, 2006 MICH. ST. L. REV. 1259, 1271 (2006).

15. *Id.*

16. Robert Kavic, A SPECIAL REPORT ON THE GREAT LAKES AND ST. LAWRENCE ECONOMY 3 (BMO Capital Markets, June 2016), <http://www.cgslgp.org/media/1818/2016-cgslgp-bmo-economic-report.pdf> [<https://perma.cc/D6ME-YWZF>].

trillion—making it the world’s fourth-largest economy.¹⁷ But the region’s Cinderella story lies in the resurgence of the United States manufacturing sector, the world’s ninth-largest economy when taken alone.¹⁸ The United States manufacturing sector has the highest multiplier effect of any economic sector; for every dollar, another \$1.89 is added to the economy.¹⁹ The sector is also a job-generator, adding four employees elsewhere for every one worker in manufacturing.²⁰ In Canada, “manufacturing comprises 10.5 per cent of the country’s entire GDP. It also has the largest multiplier effect of any industry, generating more than \$3 in economic activity for every dollar of output.”²¹

This industrial renaissance has substantially reshaped America’s “rustbelt.” Historically disinvested cities like Detroit and Cleveland are experiencing a resurgence largely due to increased hiring for well-paying jobs in the steel mills and auto manufacturing plants. Indeed, “[o]ne clear key to improving conditions . . . is the revival of America’s industrial economy.”²² The sector has been rebounding since 2010, adding some 855,000 jobs after decades of decreased employment.²³ “Although many of these new jobs are in the Southeast and Texas, Great Lakes states have been at the center of the turnaround.”²⁴ The “comeback of the Great Lakes states” will prove to be of utmost importance in this Note’s analysis and recommendations.

B. The Clean Air Act

With the context and case study of the Great Lakes Basin firmly in place, this section now turns to the key pieces of legislation at issue—the Clean Air Act and the Clean Power Plan. Subsection B walks through the Clean Air Act. It outlines general concepts, including the development of the law, what the law aims to do, and how the law shapes implementation of various programs and solutions designed to keep the air clean. This subsection then drills into Section 111 of the law (42 USC §7411), which regulates emissions from “stationary sources”—most notably and most relevant among these sources are power plants. Refineries, steel mills, and other industrial plants also fall under the umbrella of stationary sources.

17. *Id.*

18. *Top 20 Facts About Manufacturing*, N[’]ATL ASS[’]N OF MFRS. (Oct. 9, 2016), <http://www.nam.org/Newsroom/Facts-About-Manufacturing> [<https://perma.cc/PBF9-MLF9>].

19. *Id.*

20. *Id.*

21. *Manufacturing in Canada*, CAN. MFG. COAL. (Oct. 9, 2016), <http://www.manufacturingourfuture.ca/english/manufacturing-in-canada/manufacturing-in-canada.html> [<https://perma.cc/4R6B-NYEG>].

22. Joel Kotkin, *The Comeback of the Great Lakes States*, FORBES (Sept. 3, 2015), <https://www.forbes.com/sites/joelkotkin/2015/09/03/the-comeback-of-the-great-lakes-states/#62b36a6452c1> [<https://perma.cc/2W4Q-X782>].

23. *Id.*

24. *Id.*

Federal involvement in air pollution mitigation and air quality control is a relatively young concept in the United States. Throughout the 1800s and 1900s, major cities like Chicago, Detroit, and Philadelphia instituted their own air quality and pollution control ordinances in an attempt to regulate at the local level.²⁵ But prior to 1955, the country did not have any federal legislation relating to these issues.²⁶

In 1955, President Dwight D. Eisenhower signed the Air Pollution Control Act, which “simply acknowledged the existence of air pollution problems and authorized the Secretary of Health, Education and Welfare to conduct research to better understand the causes and effects of air pollution and provide technical assistance to State and local government agencies.”²⁷ This Act underwent an amendment in 1962,²⁸ and in 1963, Congress established the basic structure of the Clean Air Act.²⁹ The law underwent several amendments and reauthorizations throughout the 1960s.³⁰ In 1970, at the height of the environmental movement, Congress passed the Clean Air Act Amendments, which completely rewrote the original piece of legislation.³¹ The EPA substantially revised the act in 1977 and again 1990, thus creating the regulations most Americans are familiar with today.³²

The Clean Air Act requires the United States Environmental Protection Agency (EPA) to “establish national ambient air quality standards for certain common and widespread pollutants based on the latest science. EPA has set air quality standards for six common ‘criteria pollutants’: particulate matter (also known as particle pollution), ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, and lead.”³³

The Clean Air Act requires states to adopt air quality maintenance plans that control both emissions within the state and those that drift across state lines.³⁴ In addition to rallying against pollution from motor vehicles, the provisions in the act call for reduced emissions from industrial facilities—notably power plants.³⁵ According to the EPA:

25. TIANIA TANG, BOB O’LOUGHLIN, MIKE ROBERTS & EDWARD DANCAUSSE, U.S. DEP’T OF TRANSP. FED. HIGHWAY ADMIN., AN OVERVIEW OF FEDERAL AIR QUALITY LEGISLATION AS RELATED TO FEDERALLY-ASSISTED HIGHWAY AND TRANSIT PROGRAMS 1 (Dec. 29, 2016), http://www.fhwa.dot.gov/resourcecenter/teams/airquality/teamaq_law.pdf [<https://perma.cc/CV76-BALN>].

26. *Id.* at 1.

27. *Id.* at 3.

28. *Id.*

29. *Clean Air Act Requirements and History*, U.S. ENVTL. PROT. AGENCY (Oct. 10, 2016).

30. TANG ET AL., *supra* note 25, at 3.

31. *Id.* at 4.

32. *Clean Air Act Requirements and History*, *supra* note 29.

33. *Id.*

34. *Id.*

35. *Id.*

Congress set a goal of reducing annual SO₂ emissions by 10 million tons below the 1980 level, mostly from power plants. The law called for a market based emissions trading approach to limit the amount of SO₂ emitted by United States power plants. The initial phase, starting in 1995, applied to 111 large, high emitting coal fired power plants. The second phase, starting in 2000, brought smaller plants and cleaner plants (coal, gas, and oil-fired) into the program. . . . Allowance incentives were provided to encourage use of flue gas scrubbers, and to promote energy conservation and renewable energy. Detailed allowance allocation provisions were included to address regional interests, new units, independent power producers, and special cases, and auction provisions were included to ensure market liquidity.³⁶

These air quality maintenance plans are authorized by Sections 110 and 111 of the Clean Air Act. Although Section 110, which outlines the requirements for state implementation plans, is an important part of the broader discussion surrounding states' rights and responsibilities under the Clean Air Act, this Note specifically focuses on Section 111, Standards of Performance for New Stationary Sources. This Note delves further into Section 111 in Section IV Analysis.

C. The Clean Power Plan

The Clean Air Act has inspired quite a bit of ancillary legislation. For example, the Federal-Aid Highway Act was also passed in 1970.³⁷ Among other things, this law was the first to require highway projects to comply with national ambient air quality standards.³⁸ Provisions within the Clean Air Act also influenced the development of the Intermodal Surface Transportation Efficiency Act (ISTEA) and the Congestion Mitigation and Air Quality (CMAQ) Improvement Program, both of which encourage cleaner transportation.³⁹ Most

36. U.S. ENVTL. PROT. AGENCY, *The Clean Air Act in a Nutshell: How it Works*, 15-16 (March 22, 2013), https://www.epa.gov/sites/production/files/2015-05/documents/caa_nutshell.pdf [<https://perma.cc/A3E3-67JJ>].

37. TANG ET AL., *supra* note 25, at 4.

38. *Id.* (“With air quality, the 1970 FHA added section 109(j) to Title 23 of the U.S. Code. Section 109(j) stated that ‘The Secretary, after consultation with the Administrator of the Environmental Protection Agency, shall develop and promulgate guidelines to assure that highways constructed pursuant to this title are consistent with any approved plan for - (1) the implementation of a national ambient air quality standard for each pollutant for which an area is designated as a nonattainment area under section 107(d) of the Clean Air Act; or (2) the maintenance of a national ambient air quality standard in an area that was designated as a nonattainment area but that was later redesignated by the Administrator as an attainment area for the standard and that is required to develop a maintenance plan under section 175A of the Clean Air Act.’ For the first time in history, the need for highway projects to be consistent with SIPs developed under the 1970 Clean Air Act was legally required.”).

39. *Id.* at 8.

recently, the federal government announced a landmark piece of legislation directed at the energy industry—the Clean Power Plan.

The groundwork for the Clean Power Plan was laid as early as 2007, when the Supreme Court ruled that “carbon dioxide and other greenhouse gases can be regulated under the Clean Air Act if they endanger public health or the environment.”⁴⁰ Following this ruling, the EPA undertook research on the effects of greenhouse gases and published “endangerment and cause or contribute findings” in December 2009.⁴¹ This study’s narrow focus on greenhouse gas emissions from motor vehicles proved to have a broader influence on stationary sources as well.⁴²

The Obama Administration (“Administration”) placed energy and environmental regulation and climate change research toward the top of its priority list, and the Administration’s policies followed a trend that has been described as a “clean energy revolution.”⁴³ The Administration’s policy legacy contains a number of smaller executive orders, rules, and regulations targeting greenhouse gas emissions, but the hallmark environmental piece is certainly the Clean Power Plan.⁴⁴

In 2013 and 2014, the EPA released two rulemakings addressing carbon emissions from new power plants and existing electricity generating facilities, respectively.⁴⁵ The “Existing Source Performance Standard” born out of the 2014 rulemaking would become the backbone of the Clean Power Plan.⁴⁶ Finalized by the EPA in August 2015, the Clean Power Plan aims to reduce carbon emissions

40. Jennifer A. Dlouhy & Andrew M. Harris, *Obama’s Clean Power Plan Heads to Court: What to Know*, BLOOMBERG (Sept. 28, 2016), <http://www.renewableenergyworld.com/articles/2016/09/obama-s-clean-power-plan-heads-to-court-what-to-know.html> [https://perma.cc/Y32U-LT98]. See *Mass. v. Env’tl. Prot. Agency*, 549 U.S. 497 (2007). See also Linda Greenhouse, *Environmentalists Hail Supreme Court Ruling on Carbon*, N.Y. TIMES (April 3, 2007), <http://www.nytimes.com/2007/04/03/world/americas/03iht-scotus.1.5124385.html> [https://perma.cc/8PEZ-75TC].

41. *Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Section 202(a) of the Clean Air Act*, U.S. ENVTL. PROT. AGENCY (Oct. 10, 2016), https://19january2017snapshot.epa.gov/climatechange/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a_.html [https://perma.cc/S5U6-8GWQ]. See also 74 Fed. Reg. 66,496-66,546 (Dec. 15, 2009).

42. *Id.*

43. Brian Kahn, *Obama Just Made the Case for His Clean Energy Legacy*, CLIMATE CENTRAL (Jan. 9, 2017), <http://www.climatecentral.org/news/obama-clean-energy-legacy-science-21035>.

44. See generally *Energy*, THE WHITE HOUSE, <https://web.archive.org/web/20170117095244/https://www.whitehouse.gov/energy/securing-american-energy> [https://perma.cc/X3NR-8U75] (Jan. 15, 2017) (providing background on the Obama Administration’s energy, environmental, and climate policies).

45. Glob. Energy Inst. *EPA’s Power Plant Regulations*, U.S. CHAMBER OF COMMERCE (Dec. 29, 2016) <http://www.energyxxi.org/epa-clean-power-plan> [https://perma.cc/B8CB-4GAQ].

46. *Id.*

from power plants by thirty-two percent over the next fifteen years.⁴⁷ The plan would “effectively restructure the nation’s entire electricity sector by forcing states to shift from carbon-intensive sources of electricity generation to low- and no-carbon sources (i.e., solar, wind, and natural gas).”⁴⁸ Carbon dioxide is not currently regulated under federal air pollution programs.⁴⁹

This legislation follows the approach set out in section 111(d) of the Clean Air Act.⁵⁰ The EPA has the authority to set national emissions goals, and states have the authority to choose how to meet those goals.⁵¹ The EPA’s current interim and final statewide goals include “a rate-based state goal measured in pounds per megawatt hour (lb/MWh); a mass-based state goal measured in total short tons of [carbon dioxide]; a mass-based state goal with a new source complement measured in total short tons of [carbon dioxide].”⁵²

The plan permits states to develop and implement plans to ensure that power plants within their boundaries achieve the interim and final carbon dioxide emission performance rates, rate-based goals, or mass-based goals.⁵³ These plans may be formed individually, but states also have the option of collaborating with one another.⁵⁴ Regardless of *how* each state chooses to implement the plans, power plants must achieve the interim goals between 2022 and 2029, and the final goals by 2030.⁵⁵ According to the EPA, “these final guidelines are consistent with the law and align with the approach that Congress and EPA have always taken to regulate emissions from this and all other industrial sectors—setting source-level, source category-wide standards that sources can meet through a variety of technologies and measures.”⁵⁶

The release of the Clean Power Plan has been fraught with criticism.⁵⁷ Twenty-four states have filed a federal lawsuit, claiming that the plan is an illegal attempt to restructure the nation’s power grid and effectively kill the coal mining

47. *Overview of the Clean Power Plan*, U.S. ENVTL. PROT. AGENCY, 3-4 (Oct. 10, 2016), <https://19january2017snapshot.epa.gov/sites/production/files/2015-08/documents/fs-cpp-overview.pdf> [<https://perma.cc/D6QF-V5GS>].

48. David Zoppo, *United States Supreme Court Unexpectedly Stays Clean Power Plan*, MFG. INDUSTRY ADVISOR (Feb. 11, 2016), <https://www.manufacturingindustryadvisor.com/u-s-supreme-court-unexpectedly-stays-clean-power-plan/>.

49. Eric Pianin, *The Pros and Cons of Obama’s New Carbon Rule*, THE FISCAL TIMES (June 2, 2014), <http://www.thefiscaltimes.com/Articles/2014/06/02/Pros-and-Cons-Obama-s-New-Carbon-Rule>.

50. *Overview of the Clean Power Plan*, *supra* note 47.

51. *Id.*

52. *Id.*

53. *Id.*

54. *Id.*

55. *Id.*

56. *Overview of the Clean Power Plan*, *supra* note 47.

57. Section IV Analysis will dive deeper into the legal and political concerns surrounding the Clean Power Plan as well as discuss the possibility of the plan’s implementation even if a court rules against it.

industry.⁵⁸ Critics claim that the Clean Power Plan will not significantly reduce the atmospheric concentration of greenhouse gases.⁵⁹ Indeed, a thirty-two percent cut in emissions is merely a fraction of the eighty percent reduction needed to stabilize atmospheric greenhouse gas levels.⁶⁰

There is also concern surrounding the economic effects of the plan. Some estimate that compliance could cost tens of billions of dollars, forcing the shutdown of a number of existing coal-fired power plants.⁶¹ The United States Chamber of Commerce estimates that the economy may lose as many as 34,000 coal-related jobs by 2030.⁶² These costs would permeate the manufacturing sector as well, as “manufacturers and other industry members might be forced to implement costly energy efficiency measures.”⁶³ The United States Chamber of Commerce also predicts a “peak decline in [gross domestic product] of \$104 [billion] in 2025, with an average of \$51 [billion] per year from 2014 to 2030.”⁶⁴

II. INTERNATIONAL APPROACHES

Some politicians and legal scholars contend that the Clean Power Plan is an overreach of federal power.⁶⁵ Indeed, the Clean Power Plan could be seen as an

58. Timothy Cama, *Two Dozen States Sue Obama Over Coal Plant Emissions Rule*, THE HILL (Oct. 23, 2015), <http://thehill.com/policy/energy-environment/257856-24-states-coal-company-sue-obama-over-climate-rule> [<https://perma.cc/U75R-ML87>].

59. Jonathan H. Adler, *Placing the Clean Power Plan in Context*, WASH. POST (Feb. 10, 2016), https://www.washingtonpost.com/news/volokh-conspiracy/wp/2016/02/10/placing-the-clean-power-plan-in-context/?utm_term=.10da6d7a85c7 [<https://perma.cc/9ZF2-JQCF>].

60. *Id.*

61. Zoppo, *supra* note 48.

62. Sean Hackbarth, *EPA's Price Tag for Carbon Regulations: 34,000 Jobs*, U.S. CHAMBER OF COM. (Aug. 5, 2015), <https://www.uschamber.com/above-the-fold/epas-price-tag-carbon-regulations-34000-jobs> [<https://perma.cc/QVQ2-EZAQ>]. *See also* Sam Batkins, *EPA's Greenhouse Gas Regulation Expects Coal Generation to Decline 48 Percent*, AM. ACTION F. (Aug. 4, 2015), <https://www.americanactionforum.org/research/epas-greenhouse-gas-regulation-expects-coal-generation-to-decline-48-percent/> [<https://perma.cc/4SAH-8CGB>].

63. Zoppo, *supra* note 48.

64. Pianin, *supra* note 49.

65. *See EPA's Proposed 111(d) Rule for Existing Power Plants: Legal and Cost Issues Before the Subcomm. on Energy and Power, H. Comm. on Energy and Com.* (Mar. 17, 2015) (testimony of Laurence Tribe) <http://docs.house.gov/meetings/IF/IF03/20150317/103073/HHRG-114-IF03-Wstate-TribeL-20150317-U1.pdf> [<https://perma.cc/NP7P-PAGU>] (arguing that the Clean Power Plan is an attempt by the EPA to exercise lawmaking power that belongs to Congress and judicial power that belongs to courts). *See also* Stephanie Joyce, *Appeals Court Hears Challenge to Obama Power-Plant Emissions Rule*, NPR (Sept. 27, 2016), <http://www.npr.org/2016/09/27/495595073/appeals-court-to-hear-challenge-to-obama-power-plant-emissions-rule> [<https://perma.cc/RN96-8YNQ>] (“Appearing before the court, West Virginia Solicitor General Elbert Lin argued that the EPA had overstepped its authority. The Associated Press reported: ‘By limiting carbon emissions as it does other pollutants such as mercury and sulfur dioxide, Lin said

attempt by the federal government to establish a national energy policy that is binding on state and local governments.⁶⁶ Although national regulation of energy is new to the United States, it is not a novel concept. In fact, the practice is quite common in Europe, where a number of countries—chief among these being Germany—have developed renewable energy strategies that are enforced primarily or solely by the national government.

A. Germany and its *Energiewende*

Germany is internationally known for its strong pro-renewables, anti-carbon emissions stance on energy, which is strongly linked to an anti-nuclear movement which began in the early 1970s.⁶⁷ The term *energiewende* first appeared in a 1980 study by the *Öko-Institut*—the Institute for Applied Ecology—which called for a phase-out of oil and nuclear as sources for energy production.⁶⁸ The study advocated for sustainability, resource conservation, and decentralized supply.⁶⁹

In the mid-1970s, Germans began to take a stand against nuclear power.⁷⁰ Support for this movement was bolstered by the Three Mile Island accident in 1979, the Chernobyl disaster in 1986, and the Fukushima reactor meltdown in 2011.⁷¹ In 1998, the Social Democrats and the Green Party unseated the Christian Democrats and immediately went to work on a plan to phase out nuclear power—which was once viewed as a viable source of low-carbon energy—⁷² and

the EPA was in effect requiring states to transform their electricity generation systems by favoring one source of energy over another. West Virginia's economy is reliant on coal mining and gets 96 percent of its electricity from coal-fired plants. “This rule is not about improving the performance of existing power plants,” Lin told the judges. “It's about shutting them down.””).

66. Testimony of Laurence Tribe, *supra* note 65.

67. Paul Hockenos, *Milestones of the German Energiewende*, CLEAN ENERGY WIRE (June 16, 2015), <https://www.cleanenergywire.org/factsheets/milestones-german-energiewende> [<https://perma.cc/L3R2-5QG8>].

68. Anna Milena Jurca, *NOTE: The Energiewende: Germany's Transition to an Economy Fueled by Renewables*, 27 GEO. INT'L ENVTL. L. REV. 141, 144, 147 (2014).

69. *Id.*

70. *Id.*

71. *Id.*

72. See *U.S. Nuclear Power Plants*, NUCLEAR ENERGY INST. (Dec. 29, 2016), <https://www.nei.org/Knowledge-Center/Nuclear-Statistics/US-Nuclear-Power-Plants> [<https://perma.cc/Z73H-QPBE>] (explaining that nuclear energy accounted for 19.5 percent of total electricity (797.2 billion kilowatt-hours) produced in the United States in 2015 and that nuclear power is still utilized as a viable source of low-carbon energy in many countries). See also David Biello, *How Nuclear Power Can Stop Global Warming*, SCIENTIFIC AM. (Dec. 12, 2013), <https://www.scientificamerican.com/article/how-nuclear-power-can-stop-global-warming/> [<https://perma.cc/6VGB-3685>] (arguing in support of nuclear power as a “key energy technology to fend off catastrophic climate change”). But see *End the Nuclear Age*, GREENPEACE (Dec. 29, 2016), <http://www.greenpeace.org/international/en/campaigns/nuclear/#tab=1&gvs=false&page=1> [<https://perma.cc/KZ4F-VDPR>].

phase in renewable sources of energy.⁷³ The new administration adopted the Renewable Energy Act (known in Germany as the *Erneuerbare-Energien-Gesetz* or EEG) in 2000.⁷⁴

The Renewable Energy Act prioritizes green energy and attempts to make renewables economically viable by reducing feed-in tariffs while increasing funding for research and development.⁷⁵ Feed-in tariffs (“FITs”) are used in a number of European Union countries, the United Kingdom, and, under certain circumstances, in the United States.⁷⁶ A FIT is a performance-based incentive which “typically guarantees that customers who own a FIT-eligible renewable electricity generation facility, such as a roof-top solar photovoltaic system, will receive a set price from their utility for all of the electricity they generate and provide to the grid.”⁷⁷ In Germany, FITs have helped to bolster the competitiveness of renewables; however, the government plans to phase out feed-in tariffs in favor of a bidding system by 2017.⁷⁸

The Renewable Energy Act provides that renewables receive priority grid access.⁷⁹ This means that electricity produced from biomass, solar, and wind are pushed into Germany’s power grid ahead of electricity from conventional sources like coal and natural gas.⁸⁰ When electric supply exceeds demand, conventional power plants are required to reduce production.⁸¹

As previously stated, Germany’s energy transition historically focused on the

73. Jurca, *supra* note 68. See also Kerstine Appunn, *The History Behind Germany’s Nuclear Phase-out*, CLEAN ENERGY WIRE (July 24, 2015), <https://www.cleanenergywire.org/factsheets/history-behind-germanys-nuclear-phase-out> [perma.cc/KBD6-AXTM].

74. Dr. Matthias Lang & Annette Lang, *Overview Renewable Energy Sources Act*, GERMAN ENERGY BLOG (Dec. 29, 2016), http://www.germanenergyblog.de/?page_id=283 [perma.cc/8D77-2EQR].

75. See generally Dr. Matthias Lang & Annette Lang, *Article on 2014 German Renewable Energy Sources Act Revision Published*, GERMAN ENERGY BLOG (May 19, 2015), <http://www.germanenergyblog.de/?p=18626> [perma.cc/A7LQ-5FZG].

76. Kerstine Appunn, *Defining features of the Renewable Energy Act (EEG)*, CLEAN ENERGY WIRE (Oct. 8, 2014), <https://www.cleanenergywire.org/factsheets/defining-features-renewable-energy-act-eeg> [perma.cc/Q6B2-BSPQ].

77. “Feed-in Tariff: A policy Tool Encouraging Deployment of Renewable Electricity Technologies,” U.S. ENERGY INFO. ADMIN. (May 30, 2013), <http://www.eia.gov/todayinenergy/detail.php?id=11471> [perma.cc/5LUN-HATF].

78. Appunn, *supra* note 76.

79. *Id.*

80. *Id.* See also *What is conventional energy?*, QUORA (Jan. 5, 2016), <https://www.quora.com/What-is-conventional-energy> [https://perma.cc/96BB-H6YG (“Conventional energy directly mean the energy source which is fixed in nature like oil, gas and coal. In other words conventional energy is also termed as non-renewable energy sources.”) See generally, *Conventional Energy Sources*, MD. ENERGY ADMIN. (Dec. 29, 2016), <http://energy.maryland.gov/Pages/Info/conventional.aspx> [https://perma.cc/5CYC-X7WF] (listing coal, natural gas, and nuclear power as conventional energy sources).

81. Appunn, *supra* note 76.

phase-out of nuclear power. While this is still a primary component of the *energiewende*, the new millennium has also ushered in new growth in the renewable energy sector.⁸² In 2000, renewables accounted for 6.3 percent of the country's power production.⁸³ By 2015, this number had jumped to thirty percent.⁸⁴

This energy transition has transformed the country, but the revolution has come at a cost. Germany utilizes subsidies for renewable sources of energy and passes the cost of the subsidies down to consumers using the EEG surcharge.⁸⁵ These subsidies constitute approximately eighteen percent of the total retail price of electricity and account for approximately \$22 billion annually.⁸⁶ Certain energy-intensive industries are exempt from the EEG surcharge.⁸⁷ However, because the total cost of the subsidies must still be covered, residential consumers and consumers in lower-energy industries end up paying a higher premium for energy consumption.⁸⁸ This results in a redistribution of wealth between households and German industry, and within the industrial sector itself.⁸⁹

B. Canada's National Energy Strategy

Canada has also emerged as a major player in the pro-renewables arena. For much of its history, the country did not have a cohesive plan to conserve

82. Hockenos, *supra* note 67. ("The rapid growth of renewables in the electricity sector . . . soared from 6.3% in 2000 to 15% in 2008. By 2013, renewables accounted for 25.6% of Germany's power production with bio-energy also playing a significant role. Much of the investment came from small and medium-sized producers such as farmers, co-ops, citizen-led investment groups, and small and medium-sized businesses – not the big utilities which continued to bet on conventional energy. The plummeting cost of solar PV technology gave the *Energiewende* an enormous boost.")

83. *Statistics: Renewable Electricity Generation in Germany*, VOLKER-QUASCHNING (Dec. 29, 2016), http://www.volker-quaschning.de/datserv/ren-Strom-D/index_e.php [<https://perma.cc/9JD6-BKRH>].

84. *It's Not Easy Being Green*, THE ECONOMIST (Aug. 13, 2016), <http://www.economist.com/news/europe/21704819-even-new-reforms-doubts-remain-about-germanys-energy-transition-its-not-easy-being-green> [<https://perma.cc/N7YX-XQ2L>].

85. *Id.* See also, Appunn, *supra* note 76.

86. Appunn, *supra* note 76. See also *It's Not Easy Being Green*, *supra* note 84 ("But although green energy is subsidized in most of the EU and America, Germany's efforts are unusually generous. Consumers pay the price of the subsidies—more than €20 billion (\$22 billion) each year—through their electricity bills. Germans pay more for power than all other Europeans except Danes (German industry is exempt from some of the burden).")

87. Appunn, *supra* note 76.

88. DAAN RUTTEN, CLINGENDAEL INT'L ENERGY PROGRAMME, THE ENERGIEWENDE AND GERMANY'S INDUSTRIAL 21 (2014), http://www.clingendaelenergy.com/inc/upload/files/Ciep_paper_2014-07_web_1.pdf [<https://perma.cc/B868-PSQM>].

89. *Id.*

energy and reduce carbon emissions.⁹⁰ This all changed in 2015 with the adoption of the Canadian Energy Strategy.⁹¹ Alison Redford, former premier of Alberta, laid the groundwork for the Canadian Energy Strategy in 2012.⁹² Redford called on other premiers to help her province construct more pipelines to get oil-sands, bitumen, and crude to market.⁹³ Oil production is an integral part of Alberta's economy. The province's oil sands contain the world's third largest oil reserve, behind Venezuela and Saudi Arabia.⁹⁴ Despite administration changes in several of the provinces and territories, the talks started by Redford have moved forward.⁹⁵ Canada's premiers viewed this as an opportunity to get all provinces and territories on the same page regarding a national stance on climate change.⁹⁶ The final version of the strategy "recognizes the importance of the country's energy industry to the economy but does so in an environmentally sustainable way."⁹⁷

The Canadian Energy Strategy is centered on the themes of sustainability and conservation, technology and innovation, and delivering energy to people.⁹⁸ These three themes are broken down into ten subparts focusing on the promotion

90. Jane Tabor & Adrian Morrow, *Premiers Agree on Energy Strategy With Weakened Climate Change Pledges*, THE GLOBE AND MAIL (July 17, 2015), <http://www.theglobeandmail.com/news/national/premiers-making-progress-on-national-energy-strategy-deal-could-be-signed-today/article25545448/> [<https://perma.cc/J4UF-EGN7>] ("[U]ntil this document was signed, there was no shared goal on energy and climate change among the 13 provincial and territorial leaders.").

91. The Canadian Energy Strategy, The Council of the Federation 2 (July 2015), https://www.gov.mb.ca/jec/energy/pubs/canadian_energy_strategy.pdf [<https://perma.cc/A6C2-4CXY>] (According to the co-chair Premiers, "[t]he *Canadian Energy Strategy* is intended to be a flexible, living document that will further enable provinces and territories to move forward and collaborate on common energy-related interests according to their unique strengths, challenges and priorities. Through working with other governments, Aboriginal communities, industry, researchers, and other organizations, energy will be further developed in an environmentally and socially responsible manner, our resources will get to the people that rely on them, and the changing conditions of the energy sector will be addressed well into the future.").

92. Adrian Morrow, *What You Need to Know About the Canadian Energy Strategy*, THE GLOBE AND MAIL (July 16, 2015), <http://www.theglobeandmail.com/news/national/what-you-need-to-know-about-the-canadian-energy-strategy/article25522964/> [<https://perma.cc/DD4V-R5DX>].

93. *Id.* (explaining that Alberta did not have the infrastructure necessary to transport high volumes of the province's oil to refineries and ports. Various oil and gas companies proposed new pipelines, but these projects were tied up in regulatory reviews and by opposition from environmental groups and the First Nations.) See generally, *First Nations in Canada*, GOV'T OF CAN. (Jan. 2, 2017), <https://www.aadnc-aandc.gc.ca/eng/1307460755710/1307460872523> [<https://perma.cc/WYP7-A4RC>] (providing background on the First Nations).

94. *Facts and Statistics*, ALBERTA ENERGY (Jan. 2, 2017), <http://www.energy.alberta.ca/oilsands/791.asp> [<https://perma.cc/29VF-9KZP>].

95. Morrow, *supra* note 92.

96. *Id.*

97. Tabor & Morrow, *supra* note 90.

98. The Canadian Energy Strategy, *supra* note 91, at 8.

of energy efficiency, transition to a low-carbon economy, acceleration of research and development efforts to bring new energy technologies to market, facilitation of the development of renewable or green energy sources, promotion of market diversification, and development of a more modern and reliable energy transmission network.⁹⁹ These focus areas are discussed in detail throughout the document, but this Note will not address each one for the purpose of clarity and conciseness.

Provincial-territorial collaboration is described as “instrumental” in the development of the strategy, and the strategy calls for continued collaboration to “capitalize on energy opportunities, [sic] and expand and improve the performance of the energy sector.”¹⁰⁰

The strategy is just that—a strategy, or “flexible framework enabling provinces and territories to move forward on a common vision to shape Canada’s energy future.”¹⁰¹ It is not a binding legal document, and it does not impose any set of federal requirements on territorial, provincial, or Aboriginal governments.¹⁰² The Canadian Energy Strategy respects that Canadian provinces and territories have control over their own natural resources and does not attempt to impose a “one size fits all” policy on an energy-diverse country.¹⁰³ Implementation of the strategy prioritizes energy efficiency, delivering energy to people, transitioning to a lower carbon economy in response to climate change, and innovation and technology development.¹⁰⁴

Many of Canada’s provinces and territories already have energy and environmental statutes, regulations, and strategies or plans. The Canadian Energy Strategy provides additional guidance for provinces and territories as their governments move forward with various goals and programs.¹⁰⁵ Quebec, for

99. *Id.* at 9 (providing a complete list of the Canadian Energy Strategy’s focus areas).

100. *Id.* at 34. (providing a complete list of the Canadian Energy Strategy’s focus areas).

101. *Id.* at 35.

102. *See* Tabor & Morrow, *supra* note 90. *See generally* The Canadian Energy Strategy, *supra* note 91.

103. *See* Gov’t of Can., *Roles and Responsibilities of Governments in Natural Resources*, NATURAL RESOURCES CANADA (Jan. 2, 2017) <http://www.nrcan.gc.ca/mining-materials/taxation/8882> [<https://perma.cc/2922-LNDS>] (explaining that Canadian provinces and territories have a constitutionally protected right to manage their own non-renewable natural resources, forestry resources, and electrical energy). *See also* Gov’t of Can., *Canada’s Energy Future 2016: Province and Territory Outlooks*, NATIONAL ENERGY BOARD (Jan. 2, 2017), <https://www.nbc-one.gc.ca/nrg/ntgrtd/ft/2016pt/prvnc-trrtrl-cmprsn-eng.html> [<https://perma.cc/RH9E-8PK4>] (Alberta, Saskatchewan, and Nova Scotia produce most of their electricity from coal and natural gas. Nunavut and the Northwest Territories primarily utilize diesel and fuel oil. Prince Edward Island generates most of its power from wind energy, while Quebec, British Columbia, Manitoba, Newfoundland and Labrador, and Yukon rely primarily on hydro. New Brunswick and Ontario have diverse mixes of energy sources, including renewables, natural gas, and nuclear power.).

104. The Canadian Energy Strategy, *supra* note 91, at 35.

105. It is important to keep in mind that the Canadian Energy Strategy is **not** a piece of legislation and it does not impose baselines, targets, or sanctions for failure to comply upon local

example, has emerged as a leader in renewable energy. Hydro-Quebec, the government-owned supplier of electricity, uses water to generate ninety-nine percent of the province's electricity.¹⁰⁶

Currently, forty-five percent of Quebec's energy comes from renewable sources,¹⁰⁷ but the government of Quebec hopes to increase that percentage to nearly seventy percent by 2030.¹⁰⁸ To reach this goal, Quebec has implemented The 2030 Energy Policy, a mid-term strategy to reduce the amount of fossil fuels consumed by forty percent, and to increase the use of renewable energy sources by twenty-five percent.¹⁰⁹ Quebec intends to use natural gas as a "transition energy" while the government attempts to wean residential and commercial energy consumers off of hydrocarbons.¹¹⁰

Like Quebec, Ontario has also recently developed a climate plan. The five-year strategy is not a complete overhaul of current policy; rather it aims to provide options to consumers who wish to adopt a low-carbon lifestyle.¹¹¹

It will not take away personal choice: no one will have to stop using gas in their home or give up their gas-powered car by a certain date. Rather, the plan creates the conditions that provide choice. It gives consumers and businesses more reasons to reduce their carbon footprint, and creates competitive conditions for the adoption of low-carbon technology.¹¹²

Ontario's climate change action plan takes on the daunting task of creating a policy that attempts to have minimal adverse impact on the province's economy. The government will begin to phase out natural gas used for heating over the next five years, incentivize commercial and industrial retrofits, and provide rebates to electric vehicle owners.¹¹³ The plan proposes changes to building codes and gasoline blends and increased sales of electric vehicles by

governments.

106. *Hydro-Quebec at a Glance*, HYDRO-QUEBEC (Nov. 14, 2016), <http://www.hydroquebec.com/about/who-are-we/hydro-quebec-glance.html> [<https://perma.cc/38DE-B4P7>].

107. GOV'T OF QUEBEC, THE 2030 ENERGY POLICY 10 (2016), <https://politiqueenergetique.gouv.qc.ca/wp-content/uploads/Energy-Policy-2030.pdf> [<https://perma.cc/HQ9A-H8WB>].

108. *Quebec Announces New Energy Policy With a \$4-billion Budget*, MONTREAL GAZETTE (April 7, 2016) <http://montrealgazette.com/news/local-news/quebec-announces-new-energy-policy-with-a-4-billion-budget> [<https://perma.cc/8M9E-DMN3>].

109. *Id.*

110. THE 2030 ENERGY POLICY, *supra* note 107, at 54.

111. GOV'T OF ONTARIO, ONTARIO'S FIVE-YEAR CLIMATE CHANGE ACTION PLAN 2016-2020 7 (Oct. 10, 2016), http://www.applications.ene.gov.on.ca/ccap/products/CCAP_ENGLISH.pdf [<https://perma.cc/A3C2-7B78>].

112. *Id.*

113. Adrian Morrow & Greg Keenan, *Ontario to Spend \$7-billion on Sweeping Climate Change Plan*, THE GLOBE AND MAIL (May 16, 2016), <http://www.theglobeandmail.com/news/national/ontario-to-spend-7-billion-in-sweeping-climate-change-plan/article30029081/> [<https://perma.cc/3P4Q-AY3P>].

2025.¹¹⁴

While such policies are likely to be popular with ecoconscious voters, who will now receive government help to green their lives, they are certain to cause mass disruption for the province's automotive and energy sectors, which will have to make significant changes to the way they do business. And they have already created tension within the government between Environment Minister Glen Murray and some of his fellow ministers who worry he is going too far."¹¹⁵

Ontario's climate change action plan also contains some vague language about helping industries transition to low-carbon technologies. The plan states that the government "will work with cement, steel, lime and other high-emitting sectors that can use alternative fuels, to establish a service standard for decisions on alternative fuel applications."¹¹⁶ Willingness to collaborate with industry is certainly a good place to start.

Ontario's plan also advocates for the development of a "green bank," which "will help businesses and industries identify available government programs and financial supports, achieve economies of scale through project aggregation, calculate returns on investment, and secure financing. The delivery model for the green bank will be finalized in consultation with existing utilities."¹¹⁷

Alberta's energy sources and needs differ from those of Quebec and Ontario, and government officials have developed the Climate Leadership Plan in response to the province's unique situation.¹¹⁸ The key elements of the Climate Leadership Plan include implementing a new carbon price on greenhouse gas emissions, ending pollution from coal-generated electricity, developing more renewable energy, capping oil sands emissions, and reducing methane emissions.¹¹⁹ Oil sands account for approximately twenty-five percent of Alberta's emissions,¹²⁰ but they also account for a significant number of local jobs.¹²¹ Over 130,000 Albertans were employed in the province's upstream energy sector in 2014.¹²² Alberta's government is well-equipped to strike a balance between emissions and employment, and the province has acknowledged that increased environmental regulation likely will slow gross domestic product growth.¹²³

114. *Id.*

115. *Id.*

116. ONTARIO'S FIVE-YEAR CLIMATE CHANGE ACTION PLAN 2016-2020, *supra* note 111, at 36-37.

117. *Id.*

118. *Climate Leadership Plan*, ALBERTA GOV'T (Jan. 2, 2017), <https://www.alberta.ca/climate-leadership-plan.aspx> [<https://perma.cc/BN4L-PPEQ>].

119. *Id.*

120. *Reducing Methane Emissions*, ALBERTA GOV'T (Nov. 28, 2017), <https://www.alberta.ca/climate-methane-emissions.aspx>

121. *Facts and Statistics*, *supra* note 94.

122. *Id.*

123. *Capping Oil Sands Emissions*, ALBERTA GOV'T (Jan. 2, 2017),

III. ANALYSIS

A. Clean Air Act Section 111(d)

The Clean Power Plan has garnered a great deal of attention since its adoption by the EPA in August 2015.¹²⁴ Led by West Virginia, twenty-eight states and over one hundred utility providers, industry groups, and private companies joined in a lawsuit against the EPA in an effort to bring down the Clean Power Plan.¹²⁵ The States argue that the EPA has exceeded its authority and that the Clean Power Plan amounts to federal overreach.¹²⁶ They also argues that the Clean Power Plan unfairly targets the coal industry and would have devastating economic effects on states that rely on mining for a significant portion of gross domestic product.¹²⁷ EPA claims it is justified in enacting the Clean Power Plan based on its reading of Section 111(d) of the Clean Air Act which reads:

(d) Standards of performance for existing sources; remaining useful life of source

(1) The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by section 7410 of this title under which each State shall submit to the Administrator a plan which (A) establishes standards of performance for any existing source for any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under section 7408(a) of this title or emitted from a source category which is regulated under section 7412 of this title but (ii) to which a standard of performance under this section would apply if such existing source were a new source, and (B) provides

<https://www.alberta.ca/climate-oilsands-emissions.aspx> [<https://perma.cc/2UY7-Z27B>].

124. *Clean Power Plan for Existing Power Plants*, U.S. ENVTL. PROT. AGENCY (Dec. 29, 2016), <https://www.epa.gov/cleanpowerplan/clean-power-plan-existing-power-plants> [<https://perma.cc/KA5H-92ZG>].

125. See Coral Davenport, *Appeals Court Hears Challenge to Obama's Climate Change Rules*, N.Y. TIMES (Sept. 27, 2016), <https://www.nytimes.com/2016/09/28/us/politics/appeals-court-hears-challenge-to-obamas-climate-change-rules.html> [<https://perma.cc/2PD2-F4GU>]. See also Bobby Magill, *The Suit Against the Clean Power Plan, Explained*, CLIMATE CENTRAL (April 12, 2016), <http://www.climatecentral.org/news/the-suit-against-the-clean-power-plan-explained-20234> [<https://perma.cc/H5XF-U2G4>].

126. See David B. Rivkin, Jr., Mark DeLaquil & Andrew Grossman, *Does EPA's Clean Power Plan Violate States' Sovereign Rights?*, 16 ENGAGE no. 1 (June 15, 2015), <http://www.fed-soc.org/publications/detail/does-epas-clean-power-plan-proposal-violate-the-states-sovereign-rights> [<https://perma.cc/L2B4-WKCN>]. See also Naveena Sadasivam, *Paxton on SCOTUS Win: 'Impossible' Clean Power Plan a 'Blatant Overreach'*, TEXAS OBSERVER (Feb. 10, 2016), <https://www.texasobserver.org/temporary-win-for-texas-as-scotus-blocks-clean-power-plan/> [<https://perma.cc/2EAC-TQTF>].

127. *Cama*, *supra* note 58.

for the implementation and enforcement of such standards of performance. Regulations of the Administrator under this paragraph shall permit the State in applying a standard of performance to any particular source under a plan submitted under this paragraph to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies.

- (2) The Administrator shall have the same authority—
- (A) to prescribe a plan for a State in cases where the State fails to submit a satisfactory plan as he would have under section 7410(c) of this title in the case of failure to submit an implementation plan, and
 - (B) to enforce the provisions of such plan in cases where the State fails to enforce them as he would have under sections 7413 and 7414 of this title with respect to an implementation plan.

In promulgating a standard of performance under a plan prescribed under this paragraph, the Administrator shall take into consideration, among other factors, remaining useful lives of the sources in the category of sources to which such standard applies.¹²⁸

This section essentially states the same thing in two different ways.¹²⁹ Section 111(d) was the victim of a clerical error in 1990 when Congress was pushing through the Clean Air Act amendments.¹³⁰ In 1970, when the Clean Air act was first enacted, Section 111(d) contained the “Section 112 Exclusion,” which prohibited the EPA from using Section 111(d) to regulate air pollutants that were already regulated under Section 112.¹³¹ The 1990 revisions to the Clean Air Act “created three new pollution reduction and permitting programs and revamped

128. Clean Air Act, 42 U.S.C. § 7411 (2017).

129. Section 111(d)(1) and Section 111(d)(2) say essentially the same thing. There is one major difference, however. Section 111(d)(2) references “Section 7412,” or Section 112. The House of Representatives amendment stated that “pollutants from source categories already regulated under section 112, such as governing hazardous air pollutants, may not be addressed through section 111(d).” The Senate amendment, on the other hand, “precluded section 111(d) only when there was a regulated pollutant under section 112.” See Jehmel Terrence Hudson, *EPA’s Clean Power Plan Final Rule: What’s Next?*, 55 INFRASTRUCTURE, no. 2 (Jan. 9, 2016), http://www.americanbar.org/publications/infrastructure/2015-16/winter/epas_clean_power_plan_final_rule_whats_next.html [<https://perma.cc/3CJB-8C6T>].

130. Coral Davenport, *Obama Climate Plan, Now in Court, May Hinge on Error in 1990 Law*, N.Y. TIMES (Sept. 25, 2016), <https://www.nytimes.com/2016/09/26/us/politics/obama-court-clean-power-plan.html> [<https://perma.cc/H23L-B8UC>].

131. William Yeatman, *Primer: The Ongoing Controversy over Whether Clean Air Act §111(d) Authorizes EPA’s Clean Power Plan*, GLOBALWARMING.ORG (July 2, 2014), <http://www.globalwarming.org/2014/07/02/primer-the-ongoing-controversy-over-whether-clean-air-act-111d-authorizes-epas-clean-power-plan/> [<https://perma.cc/WJ68-6WEP>].

existing programs, including Section 112.”¹³² Both the House of Representatives and the Senate updated the Section 112 provisions, albeit inconsistently.

Under the House version, 111(d) rulemaking would proceed for “any air pollutant . . . not . . . emitted from a source category which is regulated under Section 112.” While its meaning is disputed, this language could prohibit 111(d) regulation of any source regulated under Section 112 for different pollutants.

As in the 1970 text, under the Senate version the 111(d) process would proceed for “any air pollutant . . . not included on a list published under . . . 112(b).”¹³³

In a moment of oversight, lawmakers failed to strike out one of the conflicting amendments, and the bill was sent to and signed into law by President George H.W. Bush with these conflicting provisions.¹³⁴ Applying this language to the Clean Power Plan, the House of Representatives’ amendment prohibits the EPA from regulating power plant pollution under Section 111(d) because the agency is already regulating the same type of pollution under another section of the Clean Air Act.¹³⁵ The Senate amendment would appear to permit power plant regulation under Section 111(d), even though this regulation overlaps with regulation under other sections, specifically Section 112.¹³⁶

The EPA relied on the language in the Senate amendment, which permits the EPA to enact regulations under Section 111(d) even if this regulation overlaps with regulation under other sections of the law, when developing the Clean Power Plan.¹³⁷ EPA currently regulates toxic pollutants from power plants under Section 112, and the Clean Power Plan aims to regulate greenhouse gas emissions using Section 111(d).¹³⁸

B. Clean Air Act Section 111(b)

The 2016 United States presidential election was surrounded by great uncertainty regarding the future of climate, energy, and environmental policy.

132. Kate Konschnik, *Guest Blogger Kate Konschnik: EPA’s 111(d) Authority – Follow Homer and Avoid the Sirens*, LEGAL PLANET (May 28, 2014), <http://legal-planet.org/2014/05/28/guest-blogger-kate-konschnik-epas-111d-authority-follow-homer-and-avoid-the-sirens/> [https://perma.cc/9GPP-XMBV].

133. *Id.*

134. Davenport, *supra* note 125. See also Jack Lienke, *Could a Copy-editing Error Undermine Obama’s Climate Rule?*, GRIST (Aug. 22, 2014), <http://grist.org/climate-energy/could-a-copy-editing-error-undermine-obamas-climate-rule/> [https://perma.cc/5K8M-2SAY].

135. *Id.*

136. *Id.*

137. *Id.* See also Josiah Neely, *How a drafting error could doom Obama’s carbon regulations*, THE WEEK (July 30, 2014) <http://theweek.com/articles/444973/how-drafting-error-could-doom-obamas-carbon-regulations> [https://perma.cc/DY2X-G4QV].

138. Davenport, *supra* note 125.

Democrats believed Hillary Clinton was likely to continue President Barack Obama's clean energy policy legacy.¹³⁹ Throughout her campaign, Clinton was a vocal supporter of the Paris climate conference, and her platform included proposed programs to advance clean energy and reduce carbon emissions.¹⁴⁰

The November 8th election threw many political pundits, analysts, and scholars for a loop, though.¹⁴¹ Instead of four more years of Democratic control, the Republican Party swept local, state, and national races, including the coveted presidency.¹⁴² President-Elect Trump (who will be full-fledged President Trump by the time this Note is finalized) has some very different views on domestic climate goals and energy and environmental policy. President Trump campaigned an ardent supporter of the coal, oil, and natural gas industries, advocating for looser regulations aimed at increasing production.¹⁴³ He has also spoken out against the Clean Power Plan, and has vowed to dismantle it and many more environmental policies.¹⁴⁴ The country is now asking whether he will nix the Clean Power Plan altogether, and, if so, how he might do it. This could play out in several different ways.

In one scenario, the Trump Administration may decline to continue defending the legislation in court, which could happen relatively soon if the administration chooses to quickly withdraw from the proceedings.¹⁴⁵ It may also play out over a longer period of time if the administration allows litigation to continue but fails to defend the Clean Power Plan before the Supreme Court in the case of an

139. *Climate Change*, HILLARY CLINTON CAMPAIGN WEBSITE (Dec. 29, 2016), <https://www.hillaryclinton.com/issues/climate/> [https://perma.cc/Q5T6-LPUP].

140. *Id.*

141. See Steve Lohr & Natasha Singer, *How Data Failed Us in Calling an Election*, N.Y. TIMES (Nov. 10, 2016), <https://www.nytimes.com/2016/11/10/technology/the-data-said-clinton-would-win-why-you-shouldnt-have-believed-it.html?rref=collection%2Fnewseventcollection%2Felection-2016> [https://perma.cc/89ZX-8TTP] (“Virtually all the major vote forecasters, including Nate Silver’s FiveThirtyEight site, The New York Times Upshot and the Princeton Election Consortium, put Mrs. Clinton’s chances of winning in the 70 to 99 percent range.”). See also Michael Barbaro, *How Did the Media—How Did We—Get This Wrong?* N.Y. TIMES (Nov. 9, 2016), <https://www.nytimes.com/2016/11/09/podcasts/election-analysis-run-up.html?rref=collection%2Fnewseventcollection%2Felection-2016> [https://perma.cc/JV2F-GLQW] (“‘We don’t know what happened, because the tools that we would normally use to help us assess what happened failed,’ Ms. Haberman says. ‘The polling on both sides was wrong.’”).

142. *Presidential Results*, CNN (Dec. 29, 2016), <http://www.cnn.com/election/results/president> [https://perma.cc/7YWZ-CS7U].

143. *Energy*, DONALD TRUMP CAMPAIGN WEBSITE (Dec. 29, 2016), <https://www.donaldjtrump.com/policies/energy/> [https://perma.cc/7QE6-RVVT].

144. Chelsea Harvey, *Trump Has Vowed to Kill the Clean Power Plan. Here’s How He Might—and Might Not—Succeed*, WASH. POST (Nov. 16, 2016) https://www.washingtonpost.com/news/energy-environment/wp/2016/11/11/trump-has-vowed-to-kill-the-clean-power-plan-heres-how-he-might-and-might-not-succeed/?utm_term=.88c202c763c2 [https://perma.cc/6GYE-TU8S].

145. *Id.*

appeal.¹⁴⁶ Some have speculated that the intervenor states, municipalities, and environmental groups would step in and continue to defend the case even if officials at the Department of Justice decline to defend the Clean Power Plan.¹⁴⁷ “At the same time, those intervenors might ask the Supreme Court to lift the stay it has imposed on the rule’s implementation in light of the D.C. Circuit’s ruling.”¹⁴⁸ This case could further be impacted by the vacancy on the Supreme Court bench and the current four-four conservative/liberal split.¹⁴⁹ The Supreme Court may deadlock on the case’s merits, which would permit the D.C. Circuit’s decision to stand.¹⁵⁰ However, if a conservative ninth justice is confirmed and takes the bench prior to a grant of certiorari, the Supreme Court could vote to strike down the Clean Power Plan.¹⁵¹

The Trump Administration may also file a motion for a voluntary remand, which would halt the case and allow the EPA to review the plaintiffs’ complaints and potentially reverse its rules.¹⁵² EPA administrator Scott Pruitt may direct EPA staff to rewrite the Clean Power Plan using more modest language.¹⁵³ The new proposal may interpret the concept of a “best system of emissions reduction” more narrowly than the current plan.¹⁵⁴ For example, the proposal may require power plants to upgrade their individual heat rate or efficiency.¹⁵⁵ A rewrite of the Clean Power Plan would be subject to the same notice-and-comment rulemaking as the original version of the plan.¹⁵⁶ Similarly, the administration may also urge Congress to pass a bill to block the Clean Power Plan.¹⁵⁷ Pruitt and opponents of the Clean Power Plan would likely try to support the argument that the EPA does not have the authority to regulate carbon dioxide emissions from

146. *Id.*

147. Brandon Storm, *Can President Trump Kill the Clean Power Plan and the Paris Agreement?*, LAWFARE (Nov. 17, 2016), <https://www.lawfareblog.com/can-president-trump-kill-clean-power-plan-and-paris-agreement> [<https://perma.cc/E224-7CP3>].

148. Jody Freeman, *Implications of Trump’s Victory and the Republican Congress for Environmental, Climate and Energy Regulation: Not as Bad as it Seems?*, HARV. ENVTL. L. PROGRAM EMMET CLINIC POL’Y INITIATIVE (Nov. 10, 2016) <http://environment.law.harvard.edu/postelection/> [<https://perma.cc/AU8T-J8VT>].

149. *Id.*

150. Storm, *supra* note 147. *See also* Freeman, *supra* note 148.

151. Storm, *supra* note 147.

152. Harvey, *supra* note 144.

153. Brad Plumer, *Two Big Ways Trump Could Try to Undo Obama’s Clean Power Plan*, V X (Feb. 23, 2017), <http://www.vox.com/energy-and-environment/2017/2/23/14691438/trump-repeal-clean-power-plan> [<http://perma.cc/59ND-XUQU>].

154. *Id.* *See also* Freeman, *supra* note 148.

155. Plumer, *supra* note 153. *See generally* Sam Korellis, *Coal-Fired Power Plant Heat Rate Improvement Options, Part 1*, POWER (Nov. 1, 2014), <http://www.powermag.com/coal-fired-power-plant-heat-rate-improvement-options-part-1/> [<http://perma.cc/CA5Q-YD6R>](explaining the benefits behind reduction of heat rates from coal-fired power plants).

156. Harvey, *supra* note 144.

157. *Id.*

power plants by pointing to language in the Clean Air Act.¹⁵⁸ If President Trump were to sign the bill into law, this new legislation would effectively halt litigation by rendering it moot.¹⁵⁹

Regardless of how or if President Trump approaches the Clean Power Plan as it currently stands, the EPA *may* still be able to regulate with broad authority and with similar provisions as contained in the Clean Power Plan under Section 111(b) of the Clean Air Act. Section 111(b) reads:

(b) List of categories of stationary sources; standards of performance; information on pollution control techniques; sources owned or operated by United States; particular systems; revised standards

(1)

(A) The Administrator shall, within 90 days after December 31, 1970, publish (and from time to time thereafter shall revise) a list of categories of stationary sources. He shall include a category of sources in such list if in his judgment it causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.

(B) Within one year after the inclusion of a category of stationary sources in a list under subparagraph (A), the Administrator shall publish proposed regulations, establishing Federal standards of performance for new sources within such category. The Administrator shall afford interested persons an opportunity for written comment on such proposed regulations. After considering such comments, he shall promulgate, within one year after such publication, such standards with such modifications as he deems appropriate. The Administrator shall, at least every 8 years, review and, if appropriate, revise such standards following the procedure required by this subsection for promulgation of such standards. Notwithstanding the requirements of the previous sentence, the Administrator need not review any such standard if the

158. Plumer, *supra* note 153. As illustrated in the remainder of this Note, the drafting error in the Clean Air Act creates a critical issue. On one hand, Pruitt could argue that the House of Representatives version of this law does not permit the EPA to regulate carbon dioxide emissions from existing power plants. On the other hand, concerned politicians and environmental groups could argue that the Senate version of the Clean Air Act gives the EPA the authority to regulate carbon dioxide emissions. Brad Plumer briefly addresses this in his article for Vox, and other sources later in this Note discuss this issue in greater detail.

159. Harvey, *supra* note 144. On October 9, 2017, shortly before this note was published, EPA Administrator Scott Pruitt announced that he had signed a measure to repeal the Clean Power Plan. See Lisa Friedman and Brad Plumer, *E.P.A. Announces Repeal of Major Obama-Era Carbon Emissions Rule*, N.Y. TIMES (Oct. 9, 2017), <https://www.nytimes.com/2017/10/09/climate/clean-power-plan.html>.

Administrator determines that such review is not appropriate in light of readily available information on the efficacy of such standard. Standards of performance or revisions thereof shall become effective upon promulgation. When implementation and enforcement of any requirement of this chapter indicate that emission limitations and percent reductions beyond those required by the standards promulgated under this section are achieved in practice, the Administrator shall, when revising standards promulgated under this section, consider the emission limitations and percent reductions achieved in practice.

(2) The Administrator may distinguish among classes, types, and sizes within categories of new sources for the purpose of establishing such standards.

(3) The Administrator shall, from time to time, issue information on pollution control techniques for categories of new sources and air pollutants subject to the provisions of this section.

(4) The provisions of this section shall apply to any new source owned or operated by the United States.

(5) Except as otherwise authorized under subsection (h) of this section, nothing in this section shall be construed to require, or to authorize the Administrator to require, any new or modified source to install and operate any particular technological system of continuous emission reduction to comply with any new source standard of performance.

(6) The revised standards of performance required by enactment of subsection (a)(1)(A)(i) and (ii) 1 of this section shall be promulgated not later than one year after August 7, 1977. Any new or modified fossil fuel fired stationary source which commences construction prior to the date of publication of the proposed revised standards shall not be required to comply with such revised standards.¹⁶⁰

Essentially, Section 111(b) authorizes the EPA to set standards for new, modified, and reconstructed stationary sources, including power plants.¹⁶¹ The EPA is also required to “find emission-reduction technology that has been

160. Clean Air Act, 42 U.S.C. § 7411 (2017).

161. U.S. ENVTL. PROT. AGENCY OFC. OF AIR AND RADIATION. OVERVIEW PRESENTATION: CLEAN AIR ACT SECTION 111 14-15 (Aug. 2013), http://www.americanbar.org/content/dam/aba/events/environment_energy_resources/2014/03/43rd-spring-conference/conference_materials_portal/2a.authcheckdam.pdf [<http://perma.cc/A389-PRJD>].

adequately demonstrated and use this to set federal, numerical performance standards that new power plants must meet.”¹⁶²

Section 111(b) gives the EPA broad authority to determine the facilities in need of regulation. For example, the language in Section 111(b)(1)(A) states that the EPA administrator must publish a list of stationary sources and include in that list facilities that “*in his judgment*” may produce pollution that could endanger public health and welfare.¹⁶³ Moving through the statute, Section 111(b)(1)(B) provides for a notice and comment period, with final regulations adopted by the administrator “*as he deems appropriate*.”¹⁶⁴

If read literally (and left unchallenged), the Clean Air Act Sections 111(b) and (d) could still empower the EPA to regulate emissions however it sees fit. In its current form, the Clean Air Act does not permit the EPA to require stationary sources to use specific technologies.¹⁶⁵ However, are specific sources of energy (for example, coal, natural gas, or wind) technologies? There likely are arguments on each side, but if the EPA were to determine that sources of energy are not “technologies,” Sections 111(b) and (d) could possibly lead to the EPA regulating the *mix* of energy sources that states are required to use. The main issue with the Clean Power Plan, and the broad authority granted to the EPA by the Clean Air Act, is that the legislation may (1) justify federal control of a market segment traditionally left to the states and (2) empower the federal government to limit states’ choices of energy sources by requiring that renewables trump conventional sources like fossil fuels. Section V examines some ways in which the United States could combat this slippery slope.

IV. RECOMMENDATIONS

Instead of the Clean Power Plan in its current form, the United States might benefit from a hybrid policy that combines elements of the German *energiewende*, the Canadian Energy Strategy, and domestic energy goals. This section offers recommendations that may inform future efforts in environmental and energy policy.

First, it is imperative to avoid legislating in a bubble. Energy-intensive industries like manufacturing form the backbone of the American economy.¹⁶⁶ Energy production can play a big role in the resurgence of manufacturing

162. *EPA Regulation of Greenhouse Gas Emission From New Power Plants*, CTR. FOR CLIMATE AND ENERGY SOLUTIONS (Jan. 12, 2016), <https://www.c2es.org/federal/executive/epa/ghg-standards-for-new-power-plants> [<http://perma.cc/7KF5-LYLZ>].

163. 42 U.S.C. § 7411 (2017) (emphasis added).

164. *Id.* (emphasis added).

165. *EPA Regulation of Greenhouse Gas Emission From New Power Plants*, *supra* note 158. *See also* 42 U.S.C. § 7411 (2017).

166. Chris Matthews, *The U.S. Will Surpass China as the No. 1 Country for Manufacturing by 2020*, FORTUNE (Dec. 29, 2016), <http://fortune.com/2016/03/31/united-states-manufacturing-china/> [<http://perma.cc/H32C-7WTC>].

throughout the country,¹⁶⁷ similar to the industrial renaissance that is currently taking place in the Great Lakes Basin.¹⁶⁸ It is important for environmental activists to remember this when proposing and supporting new legislation. In response to the necessary trade-offs made during adoption of the Canadian Energy Strategy, Ontario Premier Kathleen Wynne said, “This is an issue of a strong economy and strong environmental protection and those two things are not mutually exclusive. [...] They must be complimentary.”¹⁶⁹ The same holds true for the United States.

The United States may also benefit from a changed rhetoric surrounding fossil fuels, which generally have a negative reputation.¹⁷⁰ In Canada, however, one province is changing the way we think about fossil fuels. Quebec’s 2030 Energy Policy refers to *pétrole social* or “social oil.”¹⁷¹ The policy defines this as oil which is not consumed for energy needs.¹⁷² About ten percent of all oil produced is used in non-energy capacities.¹⁷³ For example, petroleum products are an integral part of plastics, drugs, and textiles.¹⁷⁴ Quebec’s energy plan acknowledges that oil’s “social benefits [...] are undeniable,” and implies that oil production must continue to serve these social and economic necessities.¹⁷⁵

The preceding recommendations are likely familiar—they have been a part of the public discourse for years. The final recommendation is more novel. It involves partnering with Canada to develop a limited-scope, shared energy strategy for the Great Lakes Basin. This recommendation aims to answer the following question: Using the Great Lakes Compact as a model, could the United

167. Bernard L. Weinstein, *Thanks to Fracking, America is Undergoing a Manufacturing Revival*, STAR-TELEGRAM (Dec. 23, 2016), <http://www.star-telegram.com/opinion/opn-columns-blogs/other-voices/article122763739.html> [<http://perma.cc/2JY6-QPGF>] (Although employment in the manufacturing sector is still below pre-recession levels, industrial output is up twenty percent since 2010 and the industry’s share of gross domestic product is only slightly below pre-recession levels. Among other factors, cheap shale gas, like the kind produced through fracking, has helped factories keep overhead costs down. Moreover, the fracking boom has helped bolster the Rustbelt’s industrial renaissance. Exploration of the Marcellus and Utica shale plays have created jobs in Pennsylvania, and steel mills in the Great Lakes and West Virginia have re-opened to manufacture parts for the fracking industry.).

168. Kotkin, *supra* note 22.

169. Tabor & Morrow, *supra* note 90.

170. *But see* Alex Epstein, *THE MORAL CASE FOR FOSSIL FUELS* (2014) (arguing that fossil fuels have the potential to provide cheap and reliable energy to the masses and that use of fossil fuels has transformed the world for the better).

171. *THE 2030 ENERGY POLICY*, *supra* note 107, at 58.

172. *Id.*

173. Erik Richer La Flèche, *Pétrole Social’’: What’s That?*, SITKEMAN ELLIOTT CAN. ENERGY L. (April 18, 2016) <http://www.canadianenergylaw.com/2016/04/articles/oil-and-gas/petrole-social-whats-that/> [<http://perma.cc/KFQ7-8GUP>].

174. *Id.*

175. *THE 2030 ENERGY POLICY*, *supra* note 107, at 58 (2016). *See also* La Flèche, *supra* note 173.

States and Canada create a shared energy strategy, and what would this look like?

A. Developing a shared energy strategy—what might this look like?

The concept of cross-boundary collaboration is not new. For decades, the United States and Canada have worked together to manage natural resources and protect the quality of the environment.¹⁷⁶ The two countries have entered into over forty international agreements, and over one hundred agreements exist between the states, provinces, and territories.¹⁷⁷ Canada is the United States' largest trading partner, accounting for approximately five percent of the value of all exports to Canada and over nineteen percent of the value of all imports from Canada in 2016.¹⁷⁸ But the United States and Canada's energy relationship is not limited to simply an import-export relationship.

The two governments are currently collaborating on research and development efforts related to hydrogen and fuel cells, and both countries are members of the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE) which "serves as a mechanism to to organize and implement effective, efficient, and focused international research, development, demonstration and commercial utilization activities related to hydrogen energy technologies."¹⁷⁹

Canada and the United States also participate in the Clean Energy Dialogue, which is "charged with expanding clean energy research and development, developing and deploying clean energy technology, and building a more efficient electricity grid based on clean and renewable energy."¹⁸⁰ These efforts are targeted at reducing air pollution from greenhouse gases and combating climate change.¹⁸¹

Although these two countries share environmental responsibility and work together to manage environmental issues, the United States and Canada diverge slightly in several areas.¹⁸² In comparison to the United States, Canada's national government has a relatively limited involvement in environmental policy. The structure of Canada's federal government delegates a substantial amount of authority to the provinces and territories—much more than America's federal

176. *EPA Collaboration with Canada*, U.S. ENVTL. PROT. AGENCY (Jan. 14, 2017), <https://www.epa.gov/international-cooperation/epa-collaboration-canada> [http://perma.cc/YL6R-JFGQ].

177. *Id.*

178. "Canada is the United States' largest partner for energy trade," U.S. Energy Information Administration (Mar. 1, 2017), <https://www.eia.gov/todayinenergy/detail.php?id=30152>.

179. "International Partnerships," U.S. Department of Energy Hydrogen and Fuel Cells Program (Nov. 27, 2017), <https://www.hydrogen.energy.gov/partnerships.html>.

180. *U.S. Relations With Canada*, U.S. DEP'T OF STATE (Jan. 14, 2017), <https://www.state.gov/r/pa/ei/bgn/2089.htm> [http://perma.cc/8GLA-NRT4].

181. *Id.*

182. These are also areas in which the United States might take a page from Canada's playbook.

government grants to states.¹⁸³ There are a variety of reasons for this, but a major one relates back to the economy. Canada's economy is highly dependent on natural resource extraction,¹⁸⁴ and Canada's constitution grants management of natural resources to the provinces and territories.¹⁸⁵ This separation of power allows provinces and territories to regulate (or deregulate) industries and practices that best fit with local goals.¹⁸⁶

Canada also diverges sharply from the United States on carbon pricing, a strategy employed by both the state and federal governments in an attempt to limit emissions. "Indeed, for most Conservative leadership candidates, carbon pricing is something for which there's little room in the policy debate. They worry the levy will add another tax on struggling consumers and businesses, hurt Canadian competitiveness and ultimately kill jobs."¹⁸⁷ Still, despite these differences, a cross-boundary energy strategy could prove effective.

The concept of a shared energy strategy in the Great Lakes-St. Lawrence River Basin is not entirely novel; the idea was toyed with during the Council of the Great Lakes Region (CGLR) Launch Conference.¹⁸⁸ Reflecting on one of the CGLR conference panels, Sara L. Seck explores what it might mean to devise an energy strategy for the Great Lakes region.¹⁸⁹ Seck focuses primarily on "tools from international law that . . . could serve to guide the development of energy strategy in the Great Lakes region."¹⁹⁰ She cautions that a shared energy strategy must be formulated with principles of international human rights and environmental justice in mind.¹⁹¹ She draws from the principles codified in the Rio Declaration, specifically drawing on Principle Two and Principle Ten.¹⁹² These Principles "emphasize the importance of participatory rights in environmental decision-making."¹⁹³ However, Seck does not develop a framework for what an energy strategy may look like in practice. This Note attempts to provide a more tangible, less theoretical shared energy strategy.

183. Eric Biber, *Environmental Law in Canada*, LEGAL PLANET (April 30, 2012), <http://legal-planet.org/2012/04/30/environmental-law-in-canada/> [<http://perma.cc/66DC-PSXC>].

184. *Id.*

185. *See* Gov't of Can., *supra* note 103.

186. Biber, *supra* note 183.

187. Jason Fekete, *Tory Leadership Race 2017: Where All the Declared and Expected Candidates Fall on Carbon Pricing*, NAT'L POST (Oct. 7, 2016), <http://news.nationalpost.com/news/canada/canadian-politics/tory-leadership-race-2017-where-where-all-the-declared-and-expected-candidates-fall-on-carbon-pricing> [<http://perma.cc/GF66-F4A6>].

188. *Council of the Great Lakes Region, Welcome to the Launch of the 7* (April 11, 2013), https://mowatcentre.ca/wp-content/uploads/pdfs/CGLR_Launch_Agenda.pdf [<http://perma.cc/2ZAK-B84G>].

189. Seck, *supra* note 2.

190. *Id.* at 30.

191. *Id.* at 34-35.

192. *Id.* at 32.

193. *Id.* at 31. *See also* Rio Declaration on Environment and Development, U.N. Doc. A/CN.151/5/Rev.1 (1992), 31 I.L.M. 876.

This type of plan would require two tiers. First, the federal government would need to set specific energy and environmental goals, similar to the structure of the Canadian Energy Strategy. Then, states would have the authority to implement specific programs, regulations, and legislation to meet these goals. This idea is nothing novel—a plain reading of Section 111(d) of the Clean Air Act, and the current interpretation thereof, shows that states already have control of existing power generation facilities.¹⁹⁴ Even if the Supreme Court or the EPA determines that the House of Representatives’ version of the 1990 Clean Air Act amendments control (recall that this version *prohibits* the EPA from regulating emissions from existing power plants since hazardous air pollutants are already regulated under Section 112 of the Clean Air Act) states could still employ the strategy suggested here since they would have the option to do so on their own terms.¹⁹⁵ This recommendation *differs* from Section 111(d) in that it proposes a regional approach to energy sharing and energy goals, since states within a region often have access to similar resources and face similar challenges and opportunities.

The best example of a successful, regional, cross-boundary strategy is the Great Lakes Compact and subsequent Agreement, which have proven effective numerous times. Most recently, in June 2016, the governors of the eight Great Lakes states voted to allow water from Lake Michigan to be diverted to Waukesha, Wisconsin, a municipality located just outside of the Great Lakes Basin.¹⁹⁶

Using the Great Lakes Compact and Agreement as a model, the Great Lakes states may join together to achieve domestic energy goals with some help from Canada. Only the federal government can enter into international treaties, but an “energy compact” could be binding on states, and an “agreement” or another good-faith document could be crafted to include Canada.

For example, governors of the Great Lakes states and premiers of Quebec and Ontario might agree that Quebec and Ontario should provide surplus power generated from renewable sources to the Great Lakes states at a set, fair rate, and, in exchange, during times of peak use and when renewables alone cannot meet demand, Quebec and Ontario agree to purchase conventional power from the Great Lakes states. Electric imports are already common in New York and Minnesota, two of the eight Great Lakes states that purchase power from

194. 42 U.S.C. § 7411. *See generally* Lesley S. Cruickshank, *The “Drafting Error” That Could Derail the Clean Power Plan*, 67 ALA. L. REV. 887 (2016). As explained earlier in this Note, the EPA under President Obama interpreted Section 111(d) of the Clean Air Act to permit regulation of hazardous air pollutants from existing power plants. This interpretation relies on the Senate version of the amendment.

195. Cruickshank, *supra* note 194.

196. Saulius Mikalonis, *Great Lakes Compact Worked as Designed in Diversion Approval*, CRAIN’S DETROIT BUSINESS (June 28, 2016), <http://www.crainsdetroit.com/article/20160628/BLOG103/160629762/great-lakes-compact-worked-as-designed-in-diversion-approval> [<https://perma.cc/A8BG-FNNZ>].

Ontario.¹⁹⁷ Because renewables make up such a high percentage of Ontario's power sources, in theory, purchasing "green" energy should help New York and Minnesota lower their own conventional production rates.¹⁹⁸ In Ohio and Indiana, where energy-intensive manufacturing forms the backbone of the states' economies, increased imports of "green" energy, combined with subsidies for manufacturers who purchase this energy, may permit manufacturers to increase production, reduce overhead costs, and reduce carbon emissions.

V. CONCLUSION

The Great Lakes-St. Lawrence River Basin is an ecologically significant region, but it is also an economic engine for both the United States and Canada.¹⁹⁹ The region's growing technology sector, its century-old manufacturing sector, and strong healthcare, agricultural, and outdoor recreation industries have helped create the world's fourth largest economy, valued at \$4.7 trillion.²⁰⁰ The manufacturing sector in each country has the highest multiplier effect of any other industry.²⁰¹ In the United States, for every dollar of output, another \$1.81 is added to the economy.²⁰² Canada's manufacturing sector generates more than \$3.00 in economic activity for every dollar of output.²⁰³

The manufacturing sector is especially energy-intensive, consuming, on average, 95.1 kilowatt-hours (kWh) of electricity and 536,500 British thermal units (Btu) of natural gas per square foot annually.²⁰⁴ Industrial processes account for nearly one-third of all energy consumption in the United States.²⁰⁵ In the eight Great Lakes states alone, industrial plants spent an average of \$20,599.96 per month on electricity in 2015.²⁰⁶ The cost of electricity is a hot button issue across

197. *Imports and Exports*, INDEP. ELECTRICITY SYS. OPERATOR (Jan. 14, 2017), <http://www.ieso.ca/Pages/About-the-IESO/default.aspx> [<https://perma.cc/ZDB5-RTW6>].

198. For an interesting tracker of electricity generation in Ontario, see *Electricity Generated in Ontario—Generation Totals*, CAN. NUCLEAR SOC'Y (Jan. 17, 2017), <https://www.cns-snc.ca/media/ontarioelectricity/ontarioelectricity.html> [<https://perma.cc/4FD9-6Z4X>] (As of 2:45 p.m. on January 17, 2017, nearly ninety-five percent of Ontario's power was being generated from nuclear, wind, and hydro—all low- or no-carbon energy sources.).

199. *See generally About our Great Lakes: Ecology*, *supra* note 10. *See also* Kavic, *supra* note 16.

200. *See* Kavic, *supra* note 16.

201. *Top 20 Facts About Manufacturing*, *supra* note 18. *Manufacturing in Canada*, *supra* note 20.

202. *Top 20 Facts About Manufacturing*, *supra* note 18.

203. *Manufacturing in Canada*, *supra* note 20.

204. *Managing Energy Costs in Manufacturing Facilities*, BUS. ENERGY ADVISOR (March 12, 2017), <https://bizenergyadvisor.com/manufacturing-facilities> [<https://perma.cc/5J8Z-J85X>].

205. *Id.*

206. *2015 Average Monthly Bill-Industrial*, EIA.GOV (March 12, 2017), https://www.eia.gov/electricity/sales_revenue_price/pdf/table5_c.pdf [<https://perma.cc/LF8T-EMU>].

the border in Canada as well.²⁰⁷ In Ontario especially, the rapid closure of coal and natural gas power plants and slow-to-catch-up green technologies have driven up the cost of electricity.²⁰⁸ Therefore, it is important for energy policy—whether at the state, regional, or federal level—to remain sensitive to the needs of the country’s economic engines.

Energy policy in the United States is somewhat bifurcated, with regulation split between the federal government and individual states. Under the Clean Air Act, the EPA has the authority to regulate hazardous air pollutants from sources like automobiles, factories, and power plants.²⁰⁹ For the past four decades, states have been tasked with developing implementation plans that meet the national ambient air quality goals set by the EPA.²¹⁰ President Obama’s Clean Power Plan, which was finalized by the EPA in August 2015,²¹¹ does not take away individual states’ authority to develop implementation plans.²¹² Indeed, the plan permits states to develop and implement plans to ensure that power plants within their boundaries achieve the interim and final carbon dioxide emission performance rates, rate-based goals, or mass-based goals.²¹³ But critics of the Clean Power Plan have argued that it is an illegal attempt to restructure the nation’s power grid and effectively kill the coal mining industry,²¹⁴ that it will not significantly reduce the atmospheric concentration of greenhouse gases,²¹⁵ and that it will cause compliance costs to skyrocket.²¹⁶ Further, states’ rights advocates argue that the Clean Power Plan is a violation of the Tenth Amendment in that it “unlawfully coerces the states” by threatening to punish state actors who do not carry out the federal policy.²¹⁷

Countries around the globe should strive for clean energy and low carbon emissions, but green technology is not always the most cost-effective strategy. European nations, particularly Germany, are good examples of the price of low-carbon living. Germany’s *energiewende* has empowered the country to phase out nuclear power and prioritize green sources of energy,²¹⁸ but this energy revolution

207. See Daniel Tencer, *Ontario Electricity Prices Are Out Of Control*, THE HUFFINGTON POST CAN. (July 21, 2016), http://www.huffingtonpost.ca/2016/07/21/ontario-hydro-rates_n_111107590.html [https://perma.cc/Z2HM-A6V8].

208. Adrian Morrow & Tom Cardoso, *Why does Ontario’s Electricity Cost So Much? A Reality Check*, THE GLOBE AND MAIL (Jan. 19, 2017), <http://www.theglobeandmail.com/news/national/why-does-electricity-cost-so-much-in-ontario/article33453270/> [https://perma.cc/6NF2-VBLS].

209. *Clean Air Act Requirements and History*, *supra* note 29.

210. *Id.*

211. *Overview of the Clean Power Plan*, *supra* note 48.

212. *Id.*

213. *Id.*

214. Cama, *supra* note 58.

215. Adler, *supra* note 59.

216. Zoppo, *supra* note 48.

217. Rivkin, Jr., DeLaquil & Grossman, *supra* note 126.

218. Jurca, *supra* note 68.

has not been a cheap endeavor. The cost of renewable energy subsidies is passed down to consumers and constitute approximately eighteen percent of the total retail price of electricity.²¹⁹ Consumers in lower-energy industries (including residential consumers) ultimately pay a higher premium for energy consumption, which results in a redistribution of wealth between households and German industry, and within the industrial sector itself.²²⁰

To avoid a similar issue in the United States, domestic goals should encourage innovation while ultimately striving to keep costs down. Each state has different capabilities and needs, so a “my way or the highway” approach to climate change and greenhouse gas emissions is not what the United States should strive to achieve. The Clean Power Plan and the EPA’s reading of the Clean Air Act lay the foundation for a slippery slope that may ultimately undermine states’ ability to choose what is best for local economic and environmental goals.

To combat this, the United States should look to Canada and form a *strategy* rather than a piece of *binding legislation*. In turn, states should adopt regional agreements with increased consumption of clean energy as the ultimate goal. The Great Lakes states are perfectly poised to lead the way in this effort. The Great Lakes-St. Lawrence River Basin region has demonstrated that its member states and provinces are capable of working together to achieve long-term success. The Great Lakes-St. Lawrence Basin Sustainable Water Resources Agreement and Great Lakes Compact have successfully prevented the diversion of water from the Great Lakes and have established further protections for the natural watersheds surrounding the lakes.²²¹

An energy partnership could resemble the Great Lakes Agreement and Compact, and the Great Lakes governors and premiers could lead the way in setting an example for the rest of the United States and Canada. The strategy should outline qualitative and quantitative ways to measure success, and these successes should be adopted by other regions like the Pacific Northwest, which shares a boundary with Canada’s western provinces, and Montana and North Dakota. This may even pave the way for an energy partnership between the southwestern states of New Mexico and Arizona and Mexico.²²²

219. *It’s Not Easy Being Green*, *supra* note 84. Appunn, *supra* note 76.

220. Rutten, *supra* note 88.

221. “Agreements,” *supra* note 11. *See also* Mikalonis, *supra* note 196 (describing the Great Lakes states’ approval of Waukesha, Wisconsin’s request to divert 8.2 million gallons of water per day from Lake Michigan. Waukesha’s drinking water aquifer is contaminated, and bringing in water from Lake Michigan proved to be the best solution to the city’s drinking water problem. Great Lakes governors unanimously approved the proposal. “The decision and the process that led to it represent a logical conclusion, based on scientific evidence that will act as a strong precedent in favor of protecting the Great Lakes.”).

222. *See generally*, Alexander Richter, *Will 2016 Be the Year Of Geothermal Energy in Mexico?*, THINK GEOENERGY (Jan. 6, 2016), <http://www.thinkgeoenergy.com/will-2016-be-the-year-of-geothermal-energy-in-mexico/> [<https://perma.cc/5PBA-2JEZ>] (“Today, Mexico is number four of the countries with the largest installed geothermal power generation capacity with (1,058

Until and unless mutually-agreeable federal regulation can be developed, states must be given the authority to manage their own energy affairs, and regions must lead the way in developing collaborative policies that balance economic stability and environmental sensitivity.

MW, the publication talks about 958 MW), representing around 7% of total installed capacity worldwide.”).