Zero-Sum Climate and Energy Politics Under the Trump Administration

by Melissa Powers

Melissa Powers is a Jeffrey Bain Faculty Scholar and Professor of Law at Lewis & Clark Law School, where she is also the founder and director of the Green Energy Institute at Lewis & Clark Law School.

Summary

The concept of "zero-sum" derives from economics and game theory, but its political meaning is less technical and objective. In political parlance, zero-sum has come to stand for the idea that there will be winners and losers in every transaction. The Trump Administration has continually espoused zero-sum ideas about energy and the climate, although its zero-sum framing focuses more generally on pitting fossil fuels (winners) against clean energy (losers). This Article, adapted from Chapter 10 of *Beyond Zero-Sum Environmentalism* (ELI Press 2019), explores whether the Administration's zero-sum politics will pose long-term damage to the United States by undermining competitive energy markets, locking in fossil fuel infrastructure, and further polarizing climate and energy politics in the United States. The Article concludes with potential strategies that states, local governments, and private actors can pursue to ensure that decarbonization will provide the greatest good for the greatest numbers, while ensuring that fossil fuels lose in the end.

I. Introduction

On June 1, 2018, President Donald Trump ordered the Secretary of Energy to create a rule that would require grid operators to purchase power from coal-fired and nuclear power plants that are no longer competitive in energy markets.[1] President Trump's effort to save a handful of power plants was the second attempt in less than one year to save nuclear and coal plants from market forces.[2] If enacted, the order would require electricity consumers to buy power they do not want or need, at the expense of power supplies that are more efficient, more cost-effective, and less environmentally harmful.[3] The order could also disrupt wholesale electricity markets, undermine more effective strategies to support nuclear power plants, and usurp traditional state authority to regulate retail electricity procurement.[4] Any benefits to coal producers and coal-dependent communities would likely be short-lived at best.[5] So, why pursue it? Simply stated, the Trump Administration views the energy transition as a zero-sum political "war on coal"[6] and other fossil fuels, and it wants fossil fuels to win.

1. Eric Wolf, *Trump Calls for Coal, Nuclear Bailouts*, Politico, June 1, 2018, www.politico.com/story/2018/06/01/donald-trump-rick-perry-coal-plants-617112; Press Release, The White House, Statement From the Press Secretary on Fuel-Secure Power Facilities (June 1, 2018), www.whitehouse.gov/briefings-statements/statement-press-secretary-fuel-secure-power-facilities/; and Draft Addendum to Justify Action to Support Fuel-Secure Power Facilities (May 29, 2018) [hereinafter Fuel-Secure Justification Memo], *available at* https://assets.documentcloud.org/documents/4491203/Grid-Memo.pdf (last visited July 10, 2018).
2. Although the order states that it would support both nuclear and coal-fired power plants, coal plants would be the primary beneficiaries. Jennifer A. Dlouhy, *Trump Prepares Lifeline for Money-Losing Coal Plants*, Bloomberg, May 31, 2018, www.bloomberg.com/news/articles/2018-06-01/trump-said-to-grant-lifeline-to-money-losing-coal-power-plants-jhv94ghl (noting that 16,200 megawatts (MW) of coal-fired power and 550 MW of nuclear power are expected to retire in 2018).
3. *See* Daniel Shawhan & Paul Picciano, Costs and Benefits of Saving Unprofitable Generators: A Simulation Case Study for U.S. Coal and Nuclear Power Plants (2017), *available at* www.rff.org/files/document/file/RFF-WP-17-22.pdf?stream=top-stories (last visited July 9, 2018) (evaluating impacts of the first attempt to save coal and nuclear plants); Press Release, American Petroleum Indus., Broad Energy Coalition Condemns Action to Subsidize Failing Coal, Nuclear Plants (June 1, 2018), www.api.org/news-policy-and-issues/news/2018/06/01/oil-wind-solar-condemn-action-to-subsidize-failing-coal-nuclear-plants.
4. Brad Plumer & Nadia Popovich, *Trump Wants to Bail Out Coal and Nuclear Plants. Here's Why That Will Be Hard*, N.Y. Times, June 13, 2018, www.nytimes.com/interactive/2018/06/13/climate/coal-nuclear-bailout.html; Federal Power Act §201(b), 16 U.S.C. §824(b) (2018) (probiting federal regulation of retail electricity sales), Federal Energy Reg. Comm'n v. Electric Power Supply Ass'n, 136 S. Ct. 760, 766 (2016).
5. Plumer & Popovich, *supra* note 4.
6. *See* Umair Irfan, *Trump's Perennial "War on Coal" Claim, Fact-Checked*, Vox.com, Jan. 21, 2018, www.vox.com/2018/1/30/16953292/trump-war-on-coal-claim-fact-checked; Michael Grunwald, *Trump's Love Affair With Coal*, Politico Mag., Oct. 15, 2017, www.politico.com/magazine/story/2017/10/15/trumps-love-affair-with-coal-215710.

The concept of "zero-sum" derives from economics and game theory, but its political meaning is less technical and objective. The zero-sum game theory refers to a contest in which one player wins at the expense of another player losing.[7] Zero-sum game theory assumes that the stakes of a game are fixed and that win-win solutions do not exist.[8] In a zero-sum scenario, compromise and cooperation have no value, and winner-take-all scenarios are the inevitable, perhaps even desired, outcome.[9] Economic theory suggests that zero-sum states may exist at the end of successful negotiations, but, unlike some game theorists, economists reject the idea that real life presents many situations that are truly zero-sum at the outset.[10]

Economists typically believe that parties will negotiate win-win outcomes until they reach a zero-sum, or Pareto-optimal, state.[11] In concept, this should promote effective bargaining and yield an outcome that ensures that all of the bargaining partners receive a benefit and none ends up an absolute "loser" at another's expense.[12] In political parlance, however, zero-sum has come to stand for the idea that there will be winners and losers in every transaction.[13] While President Trump may consider himself a great negotiator (who presumably understands zero-sum game theory), his decisions as president embody the political concept of zero-sum, in which winner-loser scenarios are the desired ends, so long as Trump is on the winning side.[14]

His Administration has continually espoused zero-sum ideas about energy and the climate, although its zero-sum framing focuses more generally on pitting fossil fuels (winners) against clean energy (losers). This framing is exhibited in the White House's strategy of U.S. "Energy Dominance,"[15] the president and his cabinet members' refusal to accept the legitimacy of climate science,[16] and steadfast support for fossil fuels at the expense of upholding other conservative values, such as federalism.[17] Where fossil fuels are pitted against carbon-free resources, fossil fuels are the Trump Administration's chosen victors.[18]

This Article explores whether the Administration's zero-sum politics will pose long-term damage to the United States by delaying energy transition and climate mitigation efforts. As of mid-2018, the Trump Administration's efforts had little impact. From January 2017, when the Administration took office, through June 2018, energy markets continued to favor renewable resources and natural gas,[19] and U.S. greenhouse gas (GHG) emissions remained relatively stable.[20] Early market signals, however, may not adequately reflect the threats posed by the Trump Administration's climate and energy policies. If the Administration successfully interrupts energy markets, fossil fuel plants will stay online longer than expected, at

7. Michael Bacharach, *Zero-Sum Games*, *in* The New Palgrave Game Theory 253, 253 (John Eatwell et al. eds., 1989); *see also* Jessica Owley, *Successful Land Conservation: Neither Zero-Sum Nor Win-Win*, *in* Shalanda Baker et al., Zero-Sum Environmentalism (ELI 2018).
8. Bacharach, *supra* note 7, at 254-55.
9. *Id.* For example, in a zero-sum game like chess, two competitors compete until one player wins.
10. *See, e.g.*, Tim Harford, *Trump, Bannon, and the Lure of Zero-Sum Thinking*, Economist, Aug. 25, 2017; Owley, *supra* note 7.
11. Shalanda Baker et al., *Beyond Zero-Sum Environmentalism*, 47 ELR 10328, 10330-31 (Apr. 2017) (essay written by J.B. Ruhl and James Salzman).
12. *Id.*
13. *Id.* at 10329 (essay written by Jessica Owley, demonstrating that zero-sum rhetoric is increasingly common).
14. *See* Dylan Matthews, *Zero-Sum Trump*, Vox.com, Jan. 19, 2017, www.vox.com/a/donald-trump-books.
15. The White House, National Security Strategy of the United States of America 22-23 (2017), *available at* www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905.pdf (last visited July 9, 2018) [hereinafter White House National Security Strategy]; Leo Kabouche, *Assessing the Trump Doctrine of "Energy Dominance,"* Global Risk Insights, Apr. 13, 2018, https://globalriskinsights.com/2018/04/trump-doctrine-energy-dominance/.
16. *See* Carol J. Miller, *For a Lump of Coal and a Drop of Oil: An Environmentalist's Critique of the Trump Administration's First Year of Energy Policies*, 36 Va. Envtl. L.J. 185, 194 (2018); Alana Abramson, *No, Trump Still Hasn't Changed His Mind About Climate Change After Hurricane Irma and Harvey*, Time Mag., Sept. 11, 2017, http://time.com/4936507/donald-trump-climate-change-hurricane-irma-hurricane-harvey/; Scott Waldman, *Judge Orders EPA to Produce Science Behind Pruitt's Warming Claims*, E&E News, June 5, 2018, www.scientificamerican.com/article/judge-orders-epa-to-produce-science-behind-pruitts-warming-claims/ (noting that Scott Pruitt has rejected the science of climate change); Scott Martelle, *Interior Secretary Zinke Reportedly Dressed Down Joshua Tree Superintendent Over Climate Change Tweets*, L.A. Times, Dec. 15, 2017, www.latimes.com/opinion/opinion-la/la-ol-zinke-twitter-joshua-tree-climate-change-20171215-story.html.
17. For example, EPA Administrator Pruitt stated he would seek to overturn California's vehicle emissions for GHGs and argued that cooperative federalism did not justify the state standards. Timothy Cama & Miranda Green, *California to Fight Trump's "Politically Motivated" Car Standards Plan*, The Hill, Apr. 2, 2018, http://thehill.com/policy/energy-environment/381323-calif-to-fight-trumps-politically-motivated-car-standards-plan. *See also* Scott Galupo, *Beware Idealogues in Federalists' Clothing*, U.S. News, Mar. 10, 2017, www.usnews.com/opinion/thomas-jefferson-street/articles/2017-03-10/epa-head-scott-pruitt-hides-his-climate-change-opposition-behind-federalism. *But see* Kenny Stein, *Limiting California's Waiver Authority Is Not a Federalism Issue*, Institute for Energy Research (Mar. 27, 2018) (arguing that the Trump Administration's efforts to override California's greenhouse gas emissions (GHG) regulations do not implicate federalism, because California's regulations play an outsized role in affecting national vehicle design trends).
18. *See* Kabouche, *supra* note 15.
19. *See* Energy Info. Admin., Short-Term Energy Outlook Supplement: Expanded Forecasts for Renewable Energy Capacity and Generation 1-3 (July 2017) [hereinafter EIA 2017 Renewable Supplement] (demonstrating increases in solar capacity from 2014 through mid-2017 and forecasting new capacity additions through 2018); Energy Info. Admin., Short-Term Energy Outlook: Renewables and Carbon Dioxide Emissions (July 10, 2018) [hereinafter EIA 2018 Renewables and CO_2 Forecast], www.eia.gov/outlooks/steo/report/renew_co2.php (projecting the share of non-hydro renewable generation to increase from 9.6% in 2017 to 10.8% in 2019).
20. EIA 2018 Renewables and CO_2 Forecast, *supra* note 19 (noting that CO_2 emissions declined by 0.9% in 2017 and were expected to increase by 1.8% in 2018 and drop by 0.5% in 2019, for a net increase of 0.4% from 2017-2019).

the expense of other energy producers.[21] Other regulatory changes could also cause lasting damage to climate mitigation efforts, energy innovation, and domestic politics, making a clean energy transition much more difficult, drawn out, and expensive.[22]

To mitigate these risks, this Article proposes that policymakers and advocates accept the zero-sum nature of some aspects of the energy transition and develop concrete plans to mitigate the losses. Rather than pursue tepid climate mitigation strategies that may seem to offer "win-win" solutions but fail to substantially reduce GHG emissions or replace fossil fuels with carbon-free energy sources, policymakers should develop ambitious decarbonization strategies. At the same time, policymakers should recognize that decarbonization may negatively impact many vulnerable communities, including low-income and minority communities that bear disproportionate energy burdens, as well as communities that have become dependent upon the jobs and financial resources that fossil fuel provide. Policies should then compensate these communities and workers, going beyond past failed neoliberal efforts, such as inadequate job training and education programs or temporary subsidies, that aim to ease the economic pains associated with industrial and market changes. By recognizing that energy decarbonization will create some losers, designing policies to protect vulnerable communities from suffering losses that corporations and banks should instead bear, policymakers and advocates could help develop a more equitable and inclusive, and less partisan, energy transition strategy.

Part I of this Article will briefly discuss the Trump Administration's climate and energy policies and how they embody a zero-sum political view. Part II will discuss how the Trump Administration's policy changes could undermine competitive energy markets, lock in fossil fuel infrastructure, and further polarize climate and energy politics in the United States. Part III will then explore strategies that states, local governments, and private actors can pursue to ensure that decarbonization will provide the greatest good for the greatest numbers, while ensuring that fossil fuels lose in the end.

II. The Trump Administration's Zero-Sum Energy and Climate Agenda

Since taking office, the Trump Administration has pursued an aggressive agenda aimed at supporting fossil fuels and rolling back regulations designed to mitigate climate change. The Administration had, as of July 11, 2017, stayed, repealed, or initiated proceedings to repeal more than 76 regulations affecting the environment, energy, and climate.[23] This agenda appears to have three overarching motivations. First, the Administration's "America First" doctrine seems to have motivated the decision to withdraw from the international climate change agreement.[24] Second, President Trump appears to have pursued a personal agenda aimed at undoing President Barack Obama's legacy and pleasing specific individuals, companies, and industries.[25] Finally, Trump's cabinet members are pursuing more dangerous and capacious strategies that aim to prop up and expand the use of fossil fuels while denying the legitimacy of climate science.[26]

Section A of this part will discuss some of the major actions the Administration has pursued to advance its pro-fossil fuel, anti-climate mitigation agenda. Section B will attempt to identify the motivations driving these actions, and it will propose that although the motivations may seem mixed, they fit within an overarching zero-sum political view in which fossil fuels should remain dominant at the expense of other fuels and other interests.

A. *The Trump Administration's Actions on Climate and Energy*

As a presidential candidate, Donald Trump railed against the "war on coal" and vowed to withdraw from the Paris Agreement.[27] Despite this, journalists speculated that the president's daughter, Ivanka Trump, would have a moderating effect and that campaign rhetoric would not become reality.[28] These speculations proved false, as President Trump aggressively sought to undermine the Obama Administration's climate change legacy and favor fossil fuels above other energy sources.

21. *See* Gavin Bade, *How DOE's Baseload Power Rule "Would Blow the Market Up*," UtilityDive, Oct. 2, 2017, www.utilitydive.com/news/how-does-baseload-power-rule-would-blow-the-market-up/506269/.
22. *See, e.g.*, EIA 2018 Renewables and CO_2 Forecast, *supra* note 19 (explaining that tariffs on solar photovoltaic modules and tax credit policies will likely delay or defer solar development).
23. Nadja Popovich et al., *76 Environmental Rules on the Way Out Under Trump*, N.Y. Times, July 6, 2018, https://www.nytimes.com/interactive/2017/10/05/climate/trump-environment-rules-reversed.html. Harvard Law School lists 45 rules that have been targeted for reform. Harvard Law School, *Environmental Law at Harvard*, http://environment.law.harvard.edu/policy-initiative/regulatory-rollback-tracker/ (last visited July 11, 2018).
24. Kabouche, *supra* note 15; *see also infra* notes 85-88 and accompanying text.
25. *See* David Smith, *The Anti-Obama: Trump's Drive to Destroy His Predecessor's Legacy*, Guardian, May 11, 2018, www.theguardian.com/us-news/2018/may/11/donald-trump-barack-obama-legacy; Grunwald, *supra* note 6 (noting that President Trump believes coal miners are "special people, special workers" and describing President Trump's efforts to follow a 3.5-page action plan prepared by coal executive Bob Murray).
26. *See* Miller, *supra* note 16, at 194-200; Michael C. Blumm & Olivier Jamin, *The Trump Public Lands Revolution: Redefining "The Public" in Public Lands*, 48 Envtl. L. 311, 312, 362 n.287 (2018); Emily Holden, *Climate Change Skeptics Run the Trump Administration*, Politico, Mar. 7, 2018, www.politico.com/story/2018/03/07/trump-climate-change-deniers-443533.
27. Coral Davenport, *Donald Trump, in Pittsburgh, Pledges to Boost Both Coal and Gas*, N.Y. Times, Sept. 22, 2016, www.nytimes.com/2016/09/23/us/politics/donald-trump-fracking.html; Ashley Parker & Coral Davenport, *Donald Trump's Energy Plan: More Fossil Fuels and Fewer Rules*, N.Y. Times, May 26, 2016, www.nytimes.com/2016/05/27/us/politics/donald-trump-global-warming-energy-policy.html.
28. *See* Matt McGrath, *SOS Ivanka! Can "First Daughter" Save Paris Climate Deal?*, BBC News, May 11, 2017, www.bbc.com/news/science-environment-39883635.

1. Repudiation of International Climate Agreements

In June 2017, President Trump announced that he would withdraw the United States from the Paris Agreement.[29] President Trump's announcement quickly made the United States an outlier in international climate change negotiations.[30] The withdrawal of U.S. financial support for developing countries to reduce their own GHG emissions and adapt to the consequences of change further ostracized the United States from its allies.[31] Although the United States cannot technically withdraw from the Paris Agreement until November 2020,[32] and some news stories questioned whether Trump would follow through with the withdrawal,[33] subsequent actions demonstrated Trump's willingness to buck international norms. For example, in a fit of pique against Canadian Prime Minister Justin Trudeau, President Trump announced in June 2018 that the United States would refuse to sign on to a G-7 consensus statement in which the leaders of the major industrial countries had committed to cooperate in addressing climate change.[34] So long as Donald Trump is president of the United States, U.S. withdrawal from the Paris Agreement appears certain.

2. Regulatory Repeals

During their first 500 days in office, Trump cabinet members also led sustained efforts to repeal dozens of regulations passed by the Obama Administration. This section will highlight some of the Administration's most important efforts.

a. The Clean Power Plan Repeal

The Clean Power Plan was one of the Obama Administration's signature environmental laws. It was the first federal regulation requiring existing power plants to meet carbon dioxide (CO_2) emissions limitations.[35] The rule aimed to reduce CO_2 emissions through on-site efficiency improvements and "beyond-the-fenceline" approaches such as replacing coal-fired power generation with less polluting natural gas generation or using renewable electricity in place of coal and gas.[36] Several states and utilities that had a substantial amount of coal in their electricity mixes challenged the Clean Power Plan as being overly stringent and beyond the scope of the U.S. Environmental Protection Agency's (EPA's) statutory powers.[37] Nonetheless, even while they challenged the rule, many states and utilities also participated in independent or collaborative regional planning processes to develop compliance strategies.[38] Had Justice Antonin Scalia not stayed implementation of the rule in early 2016[39] (and had Donald Trump not become president a year later), it is possible that the Clean Power Plan would have produced bipartisan strategies for emissions reductions from the power sector.[40] Instead, the regional planning processes have largely died out.[41]

Scott Pruitt was a vocal critic of the Clean Power Plan.[42] As the attorney general for the state of Oklahoma, Pruitt helped lead the litigation against the Clean Power Plan.[43] Pruitt then prioritized repeal of the Clean Power Plan when he became EPA Administrator.[44] On October 16, 2017, EPA issued a proposed regulation to repeal the rule.[45] At the time of this writing, the Clean Power Plan's repeal has not been finalized. Nonetheless, regulatory uncertainty associated with the plans for repeal, combined with the

29. The White House, Statement by President Trump on the Paris Climate Accord (June 1, 2017), https://www.whitehouse.gov/briefings-statements/statement-president-trump-paris-climate-accord/.
30. At the time of President Trump's announcement, only Syria and Nicaragua had refused to join the Paris Agreement. Oliver Milman et al., *Donald Trump Confirms U.S. Will Quit Paris Climate Agreement*, Guardian, June 1, 2017, www.theguardian.com/environment/2017/jun/01/donald-trump-confirms-us-will-quit-paris-climate-deal. Since then, both Syria and Nicaragua have joined. Lisa Friedman, *Syria Joins Paris Climate Accord, Leaving Only U.S. Opposed*, N.Y. Times, Nov. 7, 2017, https://www.nytimes.com/2017/11/07/climate/syria-joins-paris-agreement.html.
31. Johannes Urpelainen, *Trump's Withdrawal From the Paris Agreement Means Other Countries Will Spend Less to Fight Climate Change*, Wash. Post, Nov. 21, 2017, https://www.washingtonpost.com/news/monkey-cage/wp/2017/11/21/trumps-noncooperation-threatens-climate-finance-under-the-paris-agreement/?utm_term=.addd6e031eba.
32. Valerie Volcovici, *U.S. Submits Formal Notice of Withdrawal From Paris Climate Pact*, Reuters, Aug. 5, 2017, https://www.reuters.com/article/us-un-climate-usa-paris/u-s-submits-formal-notice-of-withdrawal-from-paris-climate-pact-idUSKBN1AK2FM.
33. *Id.*
34. *Six of the G7 Commit to Climate Action. Trump Wouldn't Even Join the Conversation*, Inside Climate News, June 10, 2018, https://insideclimatenews.org/news/10062018/g7-summit-climate-change-communique-trump-allies-estranged-germany-france-canada.
35. Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64662, 64710-15 (Oct. 23, 2015) (Clean Power Plan).
36. David Roberts, *Obama's Carbon Rule Hangs on This One Legal Question*, Grist, Feb. 9, 2015, http://grist.org/climate-energy/obamas-carbon-rule-hangs-on-this-one-legal-question/.
37. West Virginia v. EPA, No. 15-1353, Petition for Review (D.C. Cir. filed Oct. 23, 2015).
38. *See* Shannon S. Broome, *The Clean Power Plan Stay: Are States Placing Their Pencils Down?*, Trends, May/June 2016, www.americanbar.org/publications/trends/2015-2016/may-june-2016/the_clean_power_plan_stay.html (noting that Michigan, a challenger to the Clean Power Plan, was also preparing a compliance strategy); Elizabeth Harball & Emily Holden, *After the Stay: Where All 50 States Stand*, E&E News, Feb. 22, 2016, www.eenews.net/stories/1060032728.
39. West Virginia v. EPA, 136 S. Ct. 1000 (Feb. 9, 2016).
40. *See* Greg Pacyniak, *Making the Most of Cooperative Federalism: What the Clean Power Plan Has Already Achieved*, 29 Georgetown Envtl. L. Rev. 301 (2017).
41. *See* Broome, *supra* note 38 (discussing Michigan's decision to stop work on Clean Power Plan compliance after the judicial stay); Harball & Holden, *supra* note 38 (describing cessation of many planning efforts).
42. Clark Mindock, *Democrats Publicly Demand Scott Pruitt Recuse Himself From EPA's Decision to Repeal the Clean Power Plan*, Independent, Feb. 7, 2018, https://www.independent.co.uk/news/world/americas/us-politics/scott-pruitt-democrats-epa-decision-clean-power-plan-a8199751.html.
43. *Id.*
44. Lisa Friedman & Brad Plumer, *EPA Announces Repeal of Major Obama-Era Carbon Emissions Rule*, N.Y. Times, Oct. 9, 2017 (discussing impacts of repeal of the Clean Power Plan), https://www.nytimes.com/2017/10/09/climate/clean-power-plan.html?_r=0; John Larsen & Whitney Herndon, *What the CPP Would Have Done*, Rhodium Group, Oct. 9, 2017, http://rhg.com/notes/what-the-cpp-would-have-done.
45. Proposed Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 82 Fed. Reg. 48035 (Oct. 16, 2017).

stay, eliminated the need for states and utilities to develop Clean Power Plan compliance strategies.

b. Vehicle Emissions and Fuel Economy Standards

During its first 500 days in office, the Trump Administration also sought to weaken vehicle emissions and fuel economy standards that had served as keystones of the Obama Administration's climate mitigation agenda.[46] Under President Obama, fuel economy standards were doubled from an average fuel economy of approximately 25 miles per gallon (MPG) for light-duty vehicles to approximately more than 54.5 MPG for vehicles produced for model year 2025.[47] The Obama Administration also established, for the first time, federal GHG emissions standards for motor vehicles,[48] and it authorized California to set its own GHG emission standards[49] pursuant to the Clean Air Act (CAA),[50] reversing a George W. Bush Administration decision denying California that authority.[51] The Obama Administration's decisions—which initially had been negotiated as part of the auto bailout package designed to pull the United States out of the 2008 recession[52]—had survived both judicial review and political criticism,[53] and they had begun to incentivize profound transformations in the auto sector.[54]

The Trump Administration, led primarily by Pruitt, quickly targeted the fuel economy and vehicle emissions standards, seeking to roll back federal standards and to prohibit California from exercising authority under the CAA to enact its own emissions standards.[55] The extent to which Pruitt sought to roll back existing standards surprised even some of the proponents of reform.[56] For example, large truck manufacturers criticized an EPA proposal to repeal rules that apply to "glider trucks," which are heavy-duty trucks in which the tractor and trailer are built new, but the engine is old.[57] Regulations developed by the Obama Administration required these rebuilt trucks to meet emissions standards applicable to new trucks.[58] In 2017, the Trump Administration issued a proposed rule that would allow glider truck manufacturers to meet any emissions standards that applied to the engines based on their first date of manufacture, e.g., a 1990 vintage engine would need to meet 1990 emissions standards, if they exist.[59]

Companies such as Daimler and Volvo critiqued the proposal, noting that it would undermine their innovations in engine design.[60] The glider truck proposal also received bipartisan condemnation.[61] Despite this protest, on the last day of Pruitt's tenure as EPA Administrator, EPA issued a "Conditional No Action Assurance" that would allow companies to continue to produce glider trucks without meeting emissions standards.[62] Similarly, in contravention to his own stated support for states' rights, Pruitt continued to push for aggressive rollbacks of state rules designed to make vehicles less polluting and more efficient.[63]

c. Rollbacks of Regulations Governing Fossil Fuel Development

Shortly after taking office, agencies within the Trump Administration also quickly sought to rescind a number of Obama-era regulations and orders designed to control emissions from or limit the impacts of fossil fuel production

46. David Shepardson, *EPA Poised to Announce Rejection of Obama Vehicle Fuel Efficiency Rules*, Reuters, Mar. 30, 2018, www.reuters.com/article/us-autoshow-new-york-emissions/epa-poised-to-announce-rejection-of-obama-vehicle-fuel-efficiency-rules-idUSKBN1H5346.
47. *Id.*; 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards (Light-Duty Standards), 77 Fed. Reg. 62623 (Oct. 15, 2012).
48. Light-Duty Standards, *supra* note 47.
49. Notice of Decision Granting a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Vehicles (California Waiver Grant), 74 Fed. Reg. 32744, 32745 (July 8, 2009).
50. 42 U.S.C. §§7401-7671q.
51. Notice of Decision Denying a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emissions Standards for New Motor Vehicles (California Waiver Denial), 73 Fed. Reg. 12156, 12159 (Mar. 6, 2008).
52. Jody Freeman, *The Obama Administration's National Auto Policy: Lessons From the "Car Deal,"* 35 Harv. Envtl. L. Rev. 343, 362-63 (2011).
53. Coalition for Responsible Regulation v. EPA, 684 F.3d 102, 125-29 (2012), *rev'd on other grounds by* Utility Air Regulatory Group v. EPA, 134 S. Ct. 2427 (2014).
54. Coral Davenport & Hiroko Tabuchi, *EPA Prepares to Roll Back Rules Requiring Cars to Be Cleaner and More Efficient*, N.Y. Times, Mar. 29, 2018, www.nytimes.com/2018/03/29/climate/epa-cafe-auto-pollution-rollback.html.
55. Juliet Eilperin & Steven Overly, *Automakers Ask EPA to Overturn Recent Review of Fuel-Efficiency Standards*, Wash. Post, Feb. 22, 2017, www.washingtonpost.com/national/health-science/automakers-ask-epa-to-overturn-recent-review-of-fuel-efficiency-standards/2017/02/22/81ad1398-f920-11e69845-576c69081518_story.html; Stuart Leavenworth, *Trump's EPA Pick Won't Guarantee California's Right to Tougher Auto Emission Rules*, McClatchy D.C., Jan. 18, 2017, www.mcclatchydc.com/news/politics-government/congress/article127330159.html.
56. *See* Davenport & Tabuchi, *supra* note 54 (noting that automakers sought to avoid a showdown between California and EPA, while EPA seemed intent upon pursuing the showdown).
57. *See* Erin Murphy, *Freight Truck Fleets, Manufacturers, and Dealers to Pruitt: Stop Supporting Super-Polluting Glider Trucks*, Envtl. Defense Fund Blog (Jan. 24, 2018) (quoting comments submitted to EPA by the National Automobile Dealers Association, Daimler Trucks North America, and The Volvo Group, among others, opposed to the repeal); Umair Irfan, *Scott Pruitt Gave "Super Polluting" Trucks a Gift on His Last Day*, Vox.com, July 8, 2018, www.vox.com/2018/7/8/17544380/scott-pruitt-epa-truck-pollution-glider-kit-loophole.
58. Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, 81 Fed. Reg. 73478 (Oct. 25, 2016).
59. Proposed Rule, Repeal of Emission Requirement for Glider Vehicles, Glider Engines, and Glider Kits, 82 Fed. Reg. 53442 (Nov. 16, 2017).
60. *See* Murphy, *supra* note 57.
61. Dino Grandoni, *The Energy 202: Republicans Are United Behind Trump's EPA Rule Changes, Except This One*, Wash. Post, May 1, 2018 (reporting that 14 Republican congressmen sent a letter to EPA opposing the glider rule repeal).
62. Memorandum, from Susan Parker Bodine, Assistant Administrator, to Bill Wehrum, Assistant Administrator, Re: Conditional No Action Assurance Regarding Small Manufacturers of Glider Vehicles (July 6, 2018), www.epa.gov/sites/production/files/2018-07/documents/glidernoactionassurance070618.pdf.
63. Richard Revesz, *According to Scott Pruitt, States Only Have the Right to Pollute, Not Protect Their Environments*, L.A. Times, Mar. 20, 2017, www.latimes.com/opinion/op-ed/la-oe-revesz-pruitt-epa-federalism-20170320-story.html.

and development. For example, EPA moved to repeal CAA regulations that required oil and gas producers and pipeline owners to monitor for and repair methane leaks.[64] U.S. Department of the Interior Secretary Ryan Zinke ordered the Bureau of Land Management to lift a moratorium on new coal leasing on public lands and rescinded Obama-era leasing procedures that were designed to reduce risks from oil and gas development on public lands.[65] The Trump Administration also announced a controversial new plan to vastly expand offshore oil and gas production off the coasts of several states that oppose offshore fossil fuel development.[66] In response to an outcry from affected states, Secretary Zinke announced that Florida would be exempt from offshore development.[67] Journalists reported that the Florida exclusion was designed to help Republican Governor Rick Scott's campaign to become a U.S. senator.[68] Other states continued to face the prospect of unwanted offshore exploration.

3. Fossil Fuel Development and Market Disruptions

President Trump and his agency heads also took swift action to allow several new controversial fossil fuel facilities to come online. Shortly after taking office, President Trump approved completion of the controversial Keystone XL and Dakota Access oil pipelines.[69] Agencies also signed a memorandum of understanding that would shorten the environmental review period for construction of other new natural gas pipelines and signaled their support for new liquefied natural gas export terminals.[70] Finally, the Trump Administration launched two assaults on competitive wholesale energy markets in which coal and nuclear power plants are no longer competitive.

The first attempt originated from Robert Murray, a coal-mining magnate and vocal Trump supporter, by way of Secretary Rick Perry's "Grid Resilience Pricing" order.[71] In that order, the U.S. Department of Energy (DOE) directed the Federal Energy Regulatory Commission (FERC)—an independent administrative agency—to propose rules that would guarantee so-called fuel secure power plants cost recovery and a rate of return, while simultaneously allowing these plants to participate in (and thereby distort) competitive energy markets in the eastern United States.[72] The order contradicted the agency's own findings that power plant retirements did not pose a threat to grid reliability.[73] The order also would have undermined decades of work by FERC and regional organizations to create fair and effective energy markets.[74] Perhaps not surprisingly, analyses showed that Murray Energy would benefit disproportionately from the order.[75]

Most energy experts and supporters of free markets decried DOE's order as unjustified, unsupported, and unprincipled.[76] FERC seemed to share these sentiments. Although FERC followed DOE's order to release the proposed rule for notice and comment, FERC appeared to simultaneously signal that it had no real intention of changing electricity markets: FERC issued its proposed rule less than one week after receiving DOE's order, offered no independent evidence to support its proposal, and allowed only 21 days for public comments.[77] Few were surprised when FERC declined to issue a final rule,[78] and proponents of renewable energy and electricity markets celebrated the Trump Administration's loss.[79] It appears, however, that the celebration may have been premature, as the June 2018 order sought to do an end-run around FERC and provide relief for the declining coal industry under the auspices of protecting national security.[80]

The Trump Administration could not offer any new facts to support its efforts to prop up uneconomical coal power, so it instead tried to spin the order as necessary for

64. Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources; Grant of Reconsideration and Partial Stay, 82 Fed. Reg. 25730, 25731 (June 5, 2017) (to be codified 40 C.F.R. pt. 60). The D.C. Circuit invalidated the stay, on the basis that EPA did not follow administrative law requirements. Clean Air Council v. Pruitt, 862 F.3d 1 (D.C. Cir. 2017).
65. *See* Exec. Order No. 13783, 82 Fed. Reg. 16093, 16096 (Mar. 31, 2017) (ordering the Secretary of the Interior to lift the leasing moratorium); Scott Streater, *BLM Axes Obama-Era Oil and Gas Leasing Reforms*, E&E News PM, Feb. 1, 2018, www.eenews.net/eenewspm/stories/1060072679?t=https%3A%2F%2Fwww.eenews.net%2Fstories%2F1060072679.
66. *See* Exec. Order No. 13795, 82 Fed. Reg. 20815, 20816 (May 3, 2017) (signed Apr. 28, 2017).
67. Gregory Wallace, *Zinke on Offshore Drilling Flip: Florida's "Coastal Currents" Are Different*, CNN Politics, Jan. 23, 2018, https://edition.cnn.com/2018/01/23/politics/zinke-florida-tides/index.html.
68. *Id.* [66].
69. *See* Timothy Cama, *Trump Approves Keystone Pipeline*, The Hill, Mar. 24, 2017, http://thehill.com/policy/energy-environment/325587-trump-approves-keystone-pipeline; Amy Harder & Christopher M. Matthews, *Trump Administration Gives Final Approval for Dakota Access Pipeline*, Wall St. J., Feb. 7, 2017, www.wsj.com/articles/trump-administration-gives-final-approval-for-dakota-access-pipeline-1486500445.
70. Memorandum of Understanding Implementing One Federal Decision Under Executive Order 13807 (Apr. 9, 2018), www.whitehouse.gov/wp-content/uploads/2018/04/MOU-One-Federal-Decision-m-18-13-Part-2.pdf; Rebecca Kern, *Trump Push to Shorten Gas Pipeline Reviews May Limit Public Input*, Bloomberg BNA, Apr. 11, 2018, www.bna.com/trump-push-shorten-n57982090998/; Ryan Collins, *Liquefied Natural Gas Infrastructure All the Rage in the Trump Administration*, Bloomberg BNA, Apr. 26, 2017, www.bloomberg.com/news/articles/2017-04-25/lng-emerges-as-a-white-house-favorite-for-promoting-energy-jobs.
71. Grid Resilience Pricing Rule, 80 C.F.R. 46940 (proposed Oct. 10, 2017) (to be codified at 18 C.F.R. pt. 35).
72. *Id.* at 46945.
73. Bade, *supra* note 21.
74. *Id.*
75. Darius Dixon & Eric Wolff, *Trump Coal Backer Wins Big Under Perry's Power Plan*, Politico, Nov. 6, 2017, www.politico.com/story/2017/11/06/trumps-coal-backers-energy-power-rick-perry-244535.
76. Bade, *supra* note 21.
77. FERC, Grid Reliability and Resilience Pricing, No. RM18-1-000 (Oct. 4, 2017), www.ferc.gov/media/headlines/2017/2017-3/10-04-17.pdf (noting that DOE issued the proposed rule on September 28, FERC issued notice of the proposal on October 2, and comments were due on October 23, 2017).
78. Order Terminating Rulemaking Proceeding, Initiating New Proceeding, and Establishing Additional Procedures, 162 FERC ¶ 61,012 (Jan. 8, 2018) [hereinafter FERC Rejection of Grid Resilience Pricing Rule].
79. Jeff St. John, *FERC Rejects Energy Secretary Rick Perry's Coal and Nuclear Energy Market Bailout Plan*, Greentech Media, Jan 8, 2018, www.greentechmedia.com/articles/read/ferc-rejects-does-coal-and-nuclear-bailout-plan#gs.kogwbto.
80. *See* Fuel-Secure Justification Memo, *supra* note 1, at 7-10.

national security.[81] The national security arguments were exceedingly broad: in essence, the White House contended that fossil fuel production and domestic manufacturing are necessary for national security and that coal plants must stay operational to provide these security benefits.[82] The White House's arguments largely dismissed the findings of expert agencies that had concluded that coal plant retirements would not affect grid reliability or pose a threat to the United States.[83] They also disregarded grid operators' statements that the grid resiliency rule would disrupt existing energy markets without providing any necessary benefits.[84] Like many other Trump Administration policies, the grid resiliency order was anti-environmental, anti-scientific, anti-market, and anti-federalist. It did, however, conform to the zero-sum political nature of the Trump Administration's climate and energy agenda.

B. The Zero-Sumness of the Trump Administration's Climate and Energy Policies

Unlike his predecessors, who touted their interests in creating "all-of-the-above" energy policies that supposedly eschewed creating winners and losers,[85] President Trump and his cabinet members have been all about choosing sides. While the president and his cabinet members have differed slightly in their approaches and their intended victors, they all have supported fossil fuels over zero-carbon energy resources.[86] Their overt hostility to clean energy and strong affinity for coal, oil, and natural gas have seemed to be motivated by personal agendas, religion, and their "America First" and "Energy Dominance" doctrines, which have become proxies for unmitigated fossil fuel development and expansion.[87] In the Trump Administration, energy and climate have become necessarily partisan and zero-sum political games.

President Trump's personal climate and energy actions have appeared to be ad hoc attempts to benefit or hurt specific people, projects, or industries, regardless of the collateral damage.[88] This is evidenced in his rhetoric—the ongoing energy transition is actually a "war" that "beautiful, clean coal" must win, regardless of the costs[89]—and his support for specific, highly contested infrastructure projects, like the Keystone XL and Dakota Access pipelines, no matter the costs to the Native Americans, farmers, and other property owners who oppose them (not to mention costs to the planet).[90] The president believes in winner-takes-all outcomes,[91] and it is no surprise that his political outbursts typically favor one side and denigrate another.

His cabinet members have espoused zero-sum rhetoric that more generally pits fossil fuels (winners) against clean energy (losers). For example, Perry and Zinke have promoted U.S. "Energy Dominance," a doctrine through which U.S.-produced fossil fuels will prevail over all other global energy sources.[92] Cabinet members' support for fossil fuels may also have originated from their embrace of the "dominion" biblical view, which interprets the *Bible* to direct humans to exploit, rather than protect or conserve, natural resources.[93] These officials' support for fossil

81. *Id.* Among other scenarios offered to support the grid-resiliency-as-national-security-risk spin, the memorandum supporting the new order claims that, in the event of an attack on the U.S. electricity system, natural gas pipelines would be vulnerable to attack, renewable resources would be unreliable, and coal and nuclear plants would somehow be more secure and thus capable of providing necessary replacement power. *Id.* at 7-10, 19-20. As with the prior proposed rule, the new order will be anti-competitive and appears motivated to save a few coal-fired power plants that should likely close. While there are legitimate national security arguments for keeping nuclear power plants online—civilian power plants enable U.S. scientists and power plant operators to gain expertise in nuclear technologies that have both energy and military applications—this does not justify keeping coal plants online. *See* Center for Strategic & International Studies, Restoring U.S. Leadership in Nuclear Energy: A National Security Imperative 19 (2013), https://csis-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/130719_Wallace_RestoringUSLeadershipNuclearEnergy_WEB.pdf.
82. *See* Fuel-Secure Justification Memo, *supra* note 1, at 7-10, 23-28.
83. FERC Rejection of Grid Resilience Pricing Rule, *supra* note 78, at 5-9.
84. Press Release, PJM Statement on Potential Department of Energy Market Intervention (June 1, 2018), www.pjm.com/-/media/about-pjm/newsroom/2018-releases/20180601-pjm-statement-on-potential-doe-market-intervention.ashx.
85. *See* The White House, The All-of-the-Above Energy Strategy as a Path to Sustainable Economic Growth, Draft (May 2014) (on file with author); Joshua P. Fershee, *Promoting an All of the Above Approach or Pushing (Oil) Addiction and Abuse?: The Curious Role of Energy Subsidies and Mandates in U.S. Energy Policy*, 7 Envtl. & Energy L. & Pol'y J. 125 (2012).
86. *See* Miller, *supra* note 15, at 218-219; *see also* The White House, President Donald J. Trump's State of the Union Address, Remarks as Prepared for Delivery (Jan. 30, 2018), https://www.whitehouse.gov/briefings-statements/president-donald-j-trumps-state-union-address/ (stating that the Trump Administration has "ended the war on American Energy . . . and the war on 'clean coal,'" suggesting that coal is the sole or primary source of U.S. energy supply); Mark Hand, *Trump's Road to "Energy Dominance" Excludes Clean Energy*, Think Progress, June 29, 2017, https://thinkprogress.org/trump-announces-new-energy-actions-951a5fb20099/.
87. *See* Labouche, *supra* note 15.
88. *See* Juliet Eilperin & Brady Dennis, *Trump Moves Decisively to Wipe Out Obama's Climate-Change Record*, Wash. Post, Mar. 28, 2017, www.washingtonpost.com/national/health-science/trump-moves-decisively-to-wipe-out-obamas-climate-change-record/2017/03/27/411043d4-132c-11e7-9e4f-09aa75d3ec57_story.html?utm_term=.cc05cc01e2f8; Grunwald, *supra* note 6.
89. *See* Chris Mooney, *About That "War on Beautiful Clean Coal" . . .* , Wash. Post (Jan. 31, 2018), https://www.washingtonpost.com/politics/2018/live-updates/trump-white-house/fact-checking-and-analysis-of-trumps-state-of-the-union-2018-address/about-that-war-on-beautiful-clean-coal/?utm_term=.70e8fc1376ae. The reference to coal as "beautiful" appears to have been ad-libbed, as the published prepared remarks only mention "clean," but not "beautiful," coal. *See* State of the Union Address, *supra* note 86.
90. *See* Cama, *supra* note 69; Harder & Matthews, *supra* note 69. A federal district court held that the U.S. Army Corps of Engineers (Corps) violated the National Environmental Policy Act by failing to adequately consider the risks of oil spills and the impacts of construction on tribal water, fishing, and hunting treaty rights. The court also held that the Corps drew arbitrary geographical limits in its environmental justice analysis. However, the court declined to enjoy the construction on the pipeline. Standing Rock Sioux Tribe v. Corps of Eng'rs, 255 F. Supp. 3d 101 (D.D.C. 2017).
91. *See* Matthews, *supra* note 14.
92. Secretary Zinke, Secretarial Order 3351, Strengthening the Department of Interior's Energy Portfolio (May 1, 2017); Secretary of the Interior, Final Report: Review of the Department of the Interior Actions That Potentially Burden Domestic Energy 3 (Oct. 24, 2017), www.doi.gov/sites/doi.gov/files/uploads/interior_energy_actions_report_final.pdf; Press Release, Dep't of Energy, Statement from Secretary Rick Perry on DOE's Regulatory Review Report to the President (Oct. 25, 2017), https://www.energy.gov/articles/statement-secretary-energy-rick-perry-doe-s-regulatory-review-report-president; White House National Security Strategy, *supra* note 15.
93. Genesis 1:28 of the Bible, states: "God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over . . .

fuels has also been reflected in their refusal to accept the legitimacy of climate science.[94] Indeed, support for fossil fuels at times has appeared to come at the expense of upholding other conservative values, such as federalism.[95] On several occasions, EPA Administrator Pruitt and Interior Secretary Zinke invoked "states' rights" to justify rollbacks of several federal laws, while they simultaneously sought to invalidate state efforts to afford greater environmental protection.[96]

The Trump Administration's zero-sum political views were also evident in statements announcing U.S. withdrawal from the Paris Agreement. The withdrawal fit into the Administration's "America First" doctrine, which pits the United States against most of the rest of the world (including our allies).[97] In announcing the U.S. withdrawal, President Trump claimed:

> The Paris Climate Accord is simply the latest example of Washington entering into an agreement that disadvantages the United States to the exclusive benefit of other countries, leaving American workers—who I love—and taxpayers to absorb the cost in terms of lost jobs, lower wages, shuttered factories, and vastly diminished economic production.[98]

President Trump thus painted the Paris Agreement in zero-sum political terms: other countries would benefit exclusively, at the expense of the U.S. economy. President Trump also mentioned a handful of industries, specifically paper, cement, iron and steel, natural gas, and coal ("and I happen to love the coal miners," he added),[99] suggesting that his decision was designed to preference a few industries over any others that would benefit from climate mitigation, renewable energy development, and global cooperation. It is also possible that President Trump was simply following his own anti-science instincts, as he is on the record rejecting the consensus regarding climate change science.[100] Whether one of these factors outweighed the others was unclear, but the withdrawal's effect was to pit the rest of the world against the United States, and a handful of business sectors against the general health and welfare of the country.

While some might suggest that President Trump's zero-sum politics are actually negotiating tactics, they have deviated substantially from both game and economic theory. As noted in the introduction, most economists reject the practical applicability of simplified zero-sum game theory, which is premised on the idea that wins will be offset by equivalent losses.[101] Aside from two-person games like chess or checkers, few scenarios actually result in pure win-lose outcomes.[102] The complexities of climate and energy policy certainly do not meet a game theorist's idea of a zero-sum game. Neither climate change nor the energy transition will produce a clear set of absolute winners or losers.

As explained in some detail in the next part, unmitigated climate change presents profound threats to the world as a whole.[103] At some point, even those who may be shielded from direct impacts of climate change will face

every living thing." The Bible, Gen 1:28. In an interview with the Christian Broadcast Network, former EPA Administrator Pruitt stated: "The biblical world view with respect to these issues is that we have a responsibility to manage and cultivate, harvest the natural resources that we've been blessed with to truly bless our fellow mankind." David Brody, *Unraveling the "Weaponization" of EPA Is a Top Priority for Scott Pruitt*, CBN News, Feb. 26, 2018, http://www1.cbn.com/cbnnews/us/2018/february/unraveling-the-weaponization-of-the-epa-is-top-priority-for-scott-pruitt. *See also* Tom McKay, *EPA Chief Scott Pruitt Says the Bible Teaches Us to "Harvest" "Natural Resources" Like Gas, Oil, and Coal*, Gizmodo, Feb. 24, 2018, https://gizmodo.com/epa-chief-scott-pruitt-says-the-bible-teaches-us-to-har-1823298370; Tara Isabella Burton, *Pope Francis's Radical Environmentalism*, Atlantic, July 11, 2014, www.theatlantic.com/international/archive/2014/07/pope-franciss-radical-rethinking-of-environmentalism/374300/ (explaining how some evangelical Protestants interpret Genesis 1:28 to mean that "nature exists solely to provide man with its bounty" and explaining how Pope Francis disputes this interpretation); Emily Atkin, *Scott Pruitt vs. The Pope*, New Republic, Feb. 28, 2018, https://newrepublic.com/article/147198/scott-pruitt-vs-pope. DOE Secretary Perry also reportedly believes in Dominionism, although it is unclear if this belief extends overtly to resource exploitation. *See* Michelle Goldberg, *Dominionism: Michele Bachmann and Rick Perry's Dangerous Religious Bond*, Daily Beast, Aug. 14, 2011, www.thedailybeast.com/dominionism-michele-bachmann-and-rick-perrys-dangerous-religious-bond.

94. *See* Blumm & Jamin, *supra* note 26, at 312-13 n.2; Oliver Milman, *U.S. Federal Department Is Censoring Use of Term "Climate Change," Emails Reveal*, Guardian, Aug. 7, 2017, www.theguardian.com/environment/2017/aug/07/usda-climate-change-language-censorship-emails; Adam Federman, *Interior Department Scrubs Climate Change From Strategic Plan*, Nation, Oct. 25, 2017, www.thenation.com/article/interior-department-scrubs-climate-change-from-its-strategic-plan/, *Senior Officials Ordered Removal of "Climate Change" Emails*, E&E News: Greenwire, Dec. 11, 2017, www.eenews.net/greenwire/2017/12/11/stories/1060068671 (discussing DOE); Laignee Barron, *Here's What the EPA's Website Looks Like After a Year of Climate Change Censorship*, Time Mag., Mar. 1, 2018, http://time.com/5075265/epa-website-climate-change-censorship/.
95. *See* Revesz, *supra* note 63.
96. *Id.* (discussing Administrator Pruitt's inconsistencies). Secretary Zinke's support for states' rights have come under fire regarding DOE's plans to upend state and regional planning efforts to protect the imperiled greater sage-grouse and to expand offshore oil and gas drilling. *See* Lexington, *The Parable of the Sage Grouse*, Economist, May 5, 2018, www.economist.com/united-states/2018/05/05/the-parable-of-the-sage-grouse; Jennifer A. Dlouhy, *Trump Seeks to Open Most U.S. Coastal Waters to New Drilling*, Bloomberg, Jan. 5, 2018; Umair Irfan, *Florida Got an Exception to the Offshore Drilling Plan, Now Other States Want One Too*, Vox.com, Jan 12, 2018, www.vox.com/energy-and-environment/2018/1/10/16870450/ocs-offshore-drilling-oil-gas-lease-zinke-florida (describing Secretary Zinke's initial efforts to force states to accept offshore drilling, the Secretary's willingness to exempt Florida from the drilling proposal, and other states' objection to Florida's special treatment). Since issuing the offshore drilling plan and receiving substantial pushback, Secretary Zinke has appeared to walk back from the offshore drilling plan. *See* Timothy Cama, *Zinke Sees Low Demand, Strong Opposition, for New Offshore Drilling*, The Hill, Apr. 6, 2018, http://thehill.com/policy/energy-environment/382005-zinke-sees-low-demand-strong-opposition-for-new-offshore-drilling.
97. *See* Stewart Patrick, *How U.S. Allies Are Adapting to "America First,"* Foreign Affairs, Jan. 23, 2018, www.foreignaffairs.com/articles/world/2018-01-23/how-us-allies-are-adapting-america-first.
98. The White House, Statement by President Trump on the Paris Climate Accord (June 1, 2017), https://www.whitehouse.gov/briefings-statements/statement-president-trump-paris-climate-accord/.
99. *Id.* [98].
100. Kendra Pierre-Louis, *It's Cold Outside. Cue the Trump Global Warming Tweet*, N.Y. Times, Dec. 28, 2017, www.nytimes.com/2017/12/28/climate/trump-tweet-global-warming.html.
101. *See* Bacharach, *supra* note 7, at 254-55; Owley, *supra* note 7; Harford, *supra* note 10.
102. Even in a two-person game like chess, game theory may wrongly presume that a loss by one person is equivalent to a win by another. If one player cares about the outcome more than the other, the win-loss balance will not be even.
103. *See infra* Part III.

indirect losses, whether through increased taxes levied to pay for disasters, lost revenues from stranded investments in fossil fuels, the inability to travel due to weather disruptions, increased heating and cooling costs associated with temperature extremes, or social unrest caused by droughts, fires, lack of food, and sea-level rise. Climate mitigation, meanwhile, will produce gains that will be widely shared. These gains include avoiding the most dire consequences of climate change, increased employment in clean energy sectors, reduced exposure to localized pollutants emitted by fossil fuel combustion, and, hopefully, programs that make our energy system more equitable and inclusive.[104] The Trump Administration's stances on climate and energy ignore both the shared losses and gains associated with climate change and the energy transition.

The Administration's zero-sum political posture has also deviated from the economic concept of zero-sum, or Pareto optimality, which assumes that parties to a negotiation will bargain until they reach a zero-sum state, at which point they will end their negotiations.[105] The zero-sum state, in other words, is something to be avoided, and it helps negotiations reach a point of satisfactory conclusion. The Trump Administration's policies have not had such utilitarian aims—they have not been designed to avoid winner v. loser situations; they have intentionally created them.

III. The Consequences of the Trump Zero-Sum Climate and Energy Agenda

How will the Trump Administration's climate agenda impact the energy transition and climate mitigation? To a certain extent, one could argue that the Administration's actions are merely performative displays that will have very little real-world impact. By mid-June 2018, courts had stayed or invalidated some of the regulatory rollbacks,[106] and reports indicated that the Administration's policies had little impact on energy markets or GHG emissions.[107] Early signals from courts and markets, however, do not necessarily foretell future developments. To the contrary, the zero-sum political game the Trump Administration is playing could have pernicious consequences that undermine decarbonization efforts for years to come.

First and foremost, any delay in addressing climate change is dangerous.[108] Scientists have warned for years that the consequences of climate change will be much more severe the longer humanity waits to act,[109] and documented changes in the climate suggest that these warnings have been too tepid. Second, the Trump Administration's actions could distort energy markets, impede renewable energy investment and development, and facilitate more investment in fossil fuels. This, in turn, could produce infrastructure lock-in and regulatory "stickiness." Finally, the Trump Administration's zero-sum rhetoric could increase domestic partisanship that will make future carbon reductions more expensive and difficult than they otherwise would have been.

A. *Lost Opportunities to Mitigate Climate Change*

The Trump Administration's opposition to progressive energy and climate policies (not to mention to basic climate science) comes at a particularly dangerous moment. Average global temperatures spiked in 2015 and have stayed elevated since, suggesting that the planet has reached a "new normal" phase of warmer temperatures.[110] The consequences of this warming have included hurricanes (such as Hurricane Maria in 2017, which devastated Puerto Rico), catastrophic flooding (such as the 2017 flooding in Houston caused by Tropical Storm Harvey and the 2017 flooding in Bangladesh, India, and Nepal resulting from an abnormally strong monsoon), massive wildfires (including uncontrolled wildfires in Portugal in spring 2017 and wildfires up and down the western United States in summer 2017), and unprecedented heat waves (including temperatures of 122 degrees Fahrenheit in Arizona in spring 2017).[111] Increased global temperatures are also advancing dangerous feedback loops associated with melting snow, ice, and permafrost.[112] In June 2018, scientists reported that sea ice in Antarctica is melting at a rate that is three times faster than it was one decade ago.[113] Due to these accelerating impacts, scientists have warned that the earth may soon reach a tipping point beyond which it will be difficult to limit temperature increases to 2 degrees Celsius (3.6°F).[114]

104. *See* Hari M. Osofsky & Jacqueline Peel, *Energy Partisanship*, 65 Emory L.J. 695, 726-35 (2016).
105. Baker et al., *supra* note 11, at 10330-31 (essay written by J.B. Ruhl & James Salzman).
106. *See* Popovich et al., *supra* note 23.
107. *See* EIA 2017 Renewable Supplement, *supra* note 19; EIA 2018 Renewables and CO_2 Forecast, *supra* note 19.
108. James Hansen et al., *Young People's Burden: Requirement of Negative CO_2 Emissions*, 8 Earth Syst. Dynamics 577 (2017).
109. *Id.*; Myles Allen, *Paris Emissions Cuts Aren't Enough—We'll Have to Put Carbon Back in the Ground*, The Conversation (Dec. 13, 2015), https://theconversation.com/paris-emissions-cuts-arent-enough-well-have-to-put-carbon-back-in-the-ground-52175; James Dyke, *Inaction on Climate Change Risks Leaving Future Generations $530 Trillion in Debt*, The Conversation (July 19, 2017), https://theconversation.com/inaction-on-climate-change-risks-leaving-future-generations-530-trillion-in-debt-81134.
110. Sophie C. Lewis et al., *Defining a New Normal for Extremes in a Warming World*, Bull. Am. Meteorological Soc. 1139 (June 2017), https://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-16-0183.1.
111. *See* Umair Irfan & Brian Resnick, *Megadisasters Devastated America in 2017. and They're Only Going to Get Worse*, Vox.com, Mar. 26, 2018, www.vox.com/energy-and-environment/2017/12/28/16795490/natural-disasters-2017-hurricanes-wildfires-heat-climate-change-cost-deaths; Hilary Brueck, *Natural Disasters Set Records Around the World in 2017—These Were the Worst*, Bus. Insider, Dec. 24, 2017; www.businessinsider.com/worst-natural-disasters-hurricane-flood-wildfire-2017-12#california-spent-much-of-the-fall-in-flames-7; *see also* U.S. Global Climate Research Program, 2017: Climate Science Special Report: Fourth National Climate Assessment, Vol. 1 (D.J. Wuebbles et al. eds., 2017) [hereinafter U.S. 2017 Climate Science Assessment], https://science2017.globalchange.gov/.
112. U.S. 2017 Climate Science Assessment, *supra* note 111, at 50.
113. Andrew Shepherd et al., *Mass Balance of the Antarctic Ice Sheet From 1992 to 2017*, 555 Nature 219, 219 (June 2018).
114. U.S. 2017 Climate Science Assessment, *supra* note 111, at 57, 135.

The longer we wait to address climate change, the worse things will be. Increased amounts of CO_2 and other long-lived GHGs are accumulating in the atmosphere and could remain there for centuries unless proposed geoengineering technologies are developed and deployed.[115] Due to the limited availability, high costs, potential risks, and uncertain effectiveness of geoengineering solutions,[116] the increased accumulation of these long-lived gases threatens to cause increased warming for centuries to come.[117] The more we emit, the worse things will be. This is particularly worrisome because the opportunity to gain time by reducing highly potent, short-lived climate pollutants (SLCPs) is slipping by.

SLCPs include black carbon, methane, tropospheric ozone, and certain hydrofluorocarbons, all of which cause, per molecule, much more warming than CO_2.[118] Nevertheless, unlike CO_2—which may last in the atmosphere for hundreds, if not thousands, of years—SLCPs last in the atmosphere from a few days up to about 20 years.[119] If we stop emitting these gases in the near term, we could quickly reduce their concentrations in the atmosphere, thereby preventing at least 0.5° C of warming and giving society more time to address the long-lived gases.[120] Delayed mitigation efforts will reduce the near-term benefits of eliminating SLCPs and lock in temperature increases. Delay will also allow feedback loops to accelerate, as warmer air temperatures accelerate ice melt, which reduces albedo (i.e., reflectivity), as shiny snow and ice turn into darker surfaces, which allows more sunlight to turn into heat, which GHGs trap, which causes warmer temperatures, and so forth.[121]

Every policy delay caused by the Trump Administration undermines the ability of the United States to diminish these feedback loops, take advantage of SLCP reduction opportunities, and reduce CO_2 emissions. Even if the Trump Administration's policies will not have broader effects on future climate policy or energy markets, they have already caused harm. Nevertheless, as the next section argues, the Trump Administration's policies and zero-sum politics could cause lasting damage to markets and domestic politics, making effective climate mitigation even harder in the future.

B. Impacts on Markets and Policy

Although the Trump Administration's policies had little discernable effect on U.S. energy resource use or GHG emissions during the Administration's first 500 days, these policies could alter future investment and deployment decisions in the energy sector, potentially stifling investment in carbon-free energy sources and promoting investment in fossil fuels. Even if renewable resources continue to gain market share, their growth rate could slacken, undermining the sector's economic sustainability and workforce, and leaving room for fossil fuels. New investment in fossil resources also creates the risks of new path dependencies that will make future decarbonization efforts more difficult and expensive. Moreover, the policy changes effectuated by the Trump Administration could create a type of regulatory lock-in that will impede future efforts to decarbonize.

1. Investment and Deployment

Despite the Trump Administration's sustained attack on Obama-era regulations, early market signals suggested that the Trump Administration's policies had little practical effect. The percentage of electricity supplied by renewable resources continued to climb during the first year of the Trump Administration, and short-term energy forecasts suggested that renewables would continue to grow.[122] After President Trump took office, several coal-fired power plants closed, and many others are expected to shut down during his Administration.[123] Several electric utilities also announced plans to develop more renewable resources to meet future demand.[124]

Based on these developments, the continued availability of cheap natural gas, and continued cost declines for renewables, some commentators have suggested that energy markets will continue to decarbonize despite the Trump Administration's efforts.[125] They may be right. It is possible that renewable energy and natural gas may have achieved sufficient cost parity that investment and deployment of these resources will continue and acceler-

115. *Id.* at 394-403.
116. *See id.* at 401-03.
117. *Id.* at 394-401. Even with geoengineering, accumulated greenhouse gases could nonetheless "push the climate farther into unprecedented states for human civilization and increase the likelihood of 'surprises.'" *Id.* at 401.
118. *See* Piers Forster et al., *Changes in Atmospheric Constituents and in Radiative Forcing*, *in* Climate Change 2007: The Physical Science Basis, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change 129 (S. Solomon et al. eds., 2007); www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4_wg1_full_report.pdf; *see also* Michael Wara, *Building an Effective Climate Regimes While Avoiding Carbon and Energy Stalemate*, 41 Colum. J. Envtl. L. 313, 320, 324 (2016).
119. Forster et al., *supra* note 118, at 24, 77.
120. *See* Press Release, International Geosphere-Biosphere Programme, Black Carbon Larger Cause of Climate Change Than Previously Assessed (Jan. 15, 2013), http://www.igbp.net/news/pressreleases/pressreleases/blackcarbonlargercauseofclimatechangethanpreviouslyassessed.5.4910f0f013c20ff8a5f8000152.html.
121. *See* U.S. EPA, Report to Congress on Black Carbon 3 (2012).
122. EIA 2018 Renewables and CO_2 Forecast, *supra* note 19; EIA 2017 Renewable Supplement, *supra* note 19.
123. *See* Emma Foehringer Merchant, *Trump Can't Save Coal: More Capacity Closed in 2018 Than First Three Years of Obama Administration*, Greentech Media, Feb. 19, 2018, www.greentechmedia.com/articles/read/trump-cant-save-coal?utm_source=twitter&utm_medium=social&utm_campaign=gtmsocial#gs.aFM0F7Y.
124. *See* Emma Foehringer Merchant, *Resource Plans Show Some Utilities Are Still Cautiously Investing in Renewables*, Greentech Media, May 24, 2018, www.greentechmedia.com/articles/read/resource-plans-show-utilities-investing-in-renewables-but-cautiously#gs.D2f5yAM (noting that, while some utilities are moving to eliminate fossil fuels from their resources mixes, others are pursuing mixed portfolios that include fossil fuels).
125. *Id.*; Brad Plumer, *What the Optimists Get Wrong About Trump's Climate Policies*, Vox.com, Apr. 3, 2017, www.vox.com/energy-and-environment/2017/4/3/15141966/trump-climate-policies-screwed.

ate, no matter the regulatory hurdles the Trump Administration erects.

By mid-2018, however, warning signs had begun to emerge, suggesting that energy investment and development had begun to shift back toward coal. Banks that had declared during the Obama Administration that they would no longer support coal reportedly began to offer new loans to coal companies that had recently emerged from bankruptcy.[126] While none of these loans supported development of new coal-fired power plants, they could nonetheless allow plants to stay online longer than market watchers expected. When coupled with the proposed grid resilience rule, these cash infusions could undermine the ability of cleaner energy resources to clear markets and attract investment.[127]

The automobile sector displayed similar signs of retreat from promising innovations. For example, Ford announced that it would stop producing efficient passenger vehicles and go all-in on a strategy aimed at increasing production and sales of larger trucks and sports utility vehicles.[128] While Ford indicated it would continue to focus on efficiency and electrification,[129] its decision to abandon the passenger vehicle market could mean a retreat from environmental innovation and progress.

Other policies imposed by the Trump Administration could also make renewable resources more expensive or difficult to finance. For example, the Trump Administration's imposition of tariffs on imported solar panels and steel could drive up development costs for renewable facilities.[130] The 2017 tax reform legislation, which lowered corporate taxes, could reduce investment in renewable facilities and dry up funding opportunities.[131] The Administration's policies favoring natural gas development and export could perpetuate the natural gas production boom, keeping natural gas prices low and potentially displacing some new renewable facilities.[132] Although these developments had not occurred within the Administration's first 500 days, it remains to be seen whether renewable resources will be able to thrive under the Trump Administration. As the next sections explore, however, the Trump Administration's efforts could nonetheless facilitate increased infrastructure lock-in and regulatory changes that will undermine decarbonization efforts well beyond the Administration's term in office.

2. Extended Infrastructure and Emissions Lock-In

Continued deployment of new fossil-fuel infrastructure risks "locking in" GHG emissions for decades to come.[133] In 2011, the International Energy Agency (IEA) warned that GHG emissions from existing fossil fuel infrastructure would exceed the global carbon budget unless governments took meaningful actions by 2017 to reduce emissions and displace fossil fuels with clean energy sources.[134] Rather than heed the IEA's warning, countries around the globe, including the United States, continued to expand their fossil fuel infrastructure, increasing the extent of carbon lock-in and risking the loss of up to $1.6 trillion in stranded costs associated with unnecessary and risky carbon-intensive investments.[135] The potential for these investments to become stranded then enhances the risk of carbon lock-in, as regulators, consumers, investors, and businesses all seek to use fossil fuel infrastructure throughout (and often beyond) its useful life.[136] In other words, the more fossil fuel infrastructure is built, the more it will be used, and the harder it will be to transition away from fossil fuels.

Even if the Trump Administration's policies do not incentivize substantial investment and deployment of new

126. *See also* Thomas Biesheuvel & Thomas Wilson, *The War on Coal Is Making the World's Top Mine Owners a Lot Richer*, Bloomberg, May 1, 2018 (noting that many banks had policies preventing investment in coal projects, while also noting the policies for many banks extended only to new projects), https://www.bloomberg.com/news/articles/2018-06-27/drive-time-review-watches-inspired-by-cars-motorcycles-racing.

127. Bade, *supra* note 21; Mark Hand, *Everybody Hates Trump's Coal and Nuclear Bailout Plan, Except the President's Favorite Coal Industry Executive and a Bankrupt Nuke Company*, Think Progress, June 7, 2018, https://thinkprogress.org/renewable-and-nuclear-companies-oppose-trump-coal-bailout-plan-3bd1aa4fb3cf/ (discussing risks to investment for renewable companies).

128. Ford, First Quarter Statement (Apr. 25, 2018), https://media.ford.com/content/dam/fordmedia/North%20America/US/2018/04/25/1q18-financials.pdf (explaining that according to Ford, by 2020, 90% of its vehicles would be trucks, commercial vehicles, and SUVs, and the only passenger cars will be the Mustang and Focus Active).

129. *Id.*

130. *See*, *e.g.*, EIA 2018 Renewables and CO_2 Forecast, *supra* note 19 (explaining that tariffs on solar photovoltaic modules and tax credit policies will likely delay or defer solar development).

131. *See* David K. Burton & Jeffrey G. Davis, *What Is the Impact of Tax Reform on U.S. Wind Tax Equity Deals?*, Tax Equity Times, Jan. 18, 2018, www.taxequitytimes.com/2018/01/impact-tax-reform-us-wind-tax-equity-deals/; EIA 2018 Renewables and CO_2 Forecast, *supra* note 19 (explaining that tariffs on solar photovoltaic modules and tax credit policies will likely delay or defer solar development).

132. Merchant, *supra* note 124 (noting that economics boost renewables, but policy is still a dominant driver of renewable investment); *but see* David Roberts, *Clean Energy Is Catching Up to Natural Gas*, Vox.com, July 13, 2018, www.vox.com/energy-and-environment/2018/7/13/17551878/natural-gas-markets-renewable-energy (explaining that renewable energy prices have dropped so quickly that gas plants built today may be stranded by 2035). While the prices of renewables and storage technologies are indeed quickly dropping, Trump Administration policies could help drive down the cost of natural gas. Moreover, few states have developed strategies or laws that aim to transition away from natural gas and toward renewables. Thus, while it is possible that the economics of renewable resources make them competitive with natural gas, regardless of what the Trump Administration may do, it is also possible that the Trump Administration's policies will delay or interfere with the transition to renewable resources. In light of the risks presented by climate change and the need to urgently decarbonize, the possibility that natural gas will remain part of the energy system is unacceptable.

133. International Energy Agency, World Energy Outlook 229-31 (2011), https://www.iea.org/publications/freepublications/publication/WEO2011_WEB.pdf.

134. *Id.* at 231.

135. Carbon Tracker Institute, Mind the Gap: The $1.6 Trillion Energy Transition Risk (Mar. 8, 2018), www.carbontracker.org/energy-firms-risk-wasting-1-6-trillion-ignoring-low-carbon-transition/.

136. *See, e.g.*, Richard L. Revesz & Jack Lienke, Struggling for Air: Power Plants and the "War on Coal" (Oxford Univ. Press 2016) (discussing the consequences of "grandfathering" existing coal plants from Clean Air Act requirements and how that resulted in many facilities extending their lifespans beyond their initial useful lives); Amy L. Stein, *Breaking Energy Path Dependencies*, 82 Brook. L. Rev. 559 (2017).

fossil fuel infrastructure, they will increase the likelihood that existing infrastructure will stay online longer and that energy consumers will invest in appliances, vehicles, and other devices that run on fossil fuels. Extending the lifespan of existing infrastructure could stifle investment in new clean energy resources by suppressing market demand or preventing regulators from authorizing new investments.[137] For example, electric utilities must often obtain state regulatory authorization through a certificate of convenience and necessity (CCN) prior to investing in new facilities.[138] To receive a CCN, a regulated utility must typically show that the facility is necessary to meet forecasted energy demand.[139] If coal plants and other facilities stay on line, this may prevent utilities from making the necessary showing.

Similarly, new investments by energy consumers will likely delay and raise the costs of decarbonization. Many studies conclude that energy decarbonization must involve an "electrify everything" approach based on increased energy conservation, electrification of the heating and transportation sectors, and replacing fossil fuel electricity generation with carbon-free generation.[140] This will require, among other changes, the replacement of natural gas furnaces with heat pumps and combustion engines with electric vehicles.[141] If consumers respond to the Trump Administration's pro-fossil fuel strategy by continuing to purchase equipment that runs on fossil fuels, the needed replacements will be more expensive and drawn-out.

Legal scholars have warned about these harmful path dependencies for years, well before the Trump Administration took office.[142] Nevertheless, as the window to prevent the worst impacts from climate change is closing at an ever-increasing pace, the Trump Administration's regressive actions come at a particularly dangerous time. The risks this backtracking presents are even more worrisome due to the regulatory backsliding that the Trump Administration's climate agenda could create.

3. Regulatory Stickiness

To date, many of the Trump Administration's regulatory and administrative attempts to promote fossil fuels and weaken climate mitigation rules have had limited success on the ground and, when challenged, in the courts and before agency decisionmakers.[143] This does not mean, however, that the Administration's efforts will all fail. The vast majority of the Administration's actions have yet to be finalized,[144] and while some rules and orders will likely be invalidated in court, deferential standards of review suggest that many of the Trump Administration's efforts will succeed, particularly where issues of scientific expertise or policy judgments are at issue.[145] If the Trump administration successfully passes regulations that survive judicial review, the next administration will face a heavier burden if it seeks to repeal those regulations.[146] In some cases, it may be impossible (or nearly so) for an agency to reverse a prior administration's interpretation of the law.[147]

Since many laws do not expressly address climate change or GHGs, there are many questions about the extent to which various statutes require consideration of climate change or regulation of climate forcers. If the Trump Administration's statutory interpretations reach the courts, there is a distinct chance that courts could agree with the Trump Administration's views that certain statutes do not regulate GHGs or encompass climate change.[148] A successor government could be bound by these interpretations. The Trump Administration's regulatory actions could have

137. *See* Melissa Powers, *The Cost of Coal: Climate Change and the End of Coal as a Source of "Cheap" Electricity*, U. Pa. J. Bus. L. 407 (2010); Emily Hammond & Jim Rossi, *Stranded Costs and Grid Decarbonization*, 82 Brook. L. Rev. 645 (2017).

138. Powers, *supra* note 137, at 426 n.154.

139. *Id.*

140. *See* Keith Dennis et al., *Environmentally Beneficial Electrification: The Dawn of Emissions Efficiency*, 29 Elec. J. 52 (2016); David Roberts, *The Key to Tackling Climate Change: Electrify Everything*, Vox.com, Oct. 27, 2017, www.vox.com/2016/9/19/12938086/electrify-everything (referencing studies).

141. *See* David Roberts, *Most American Homes Are Still Heated With Fossil Fuels, It's Time to Electrify*, Vox.com, June 20, 2018, www.vox.com/energy-and-environment/2018/6/20/17474124/electrification-natural-gas-furnace-heat-pump.

142. *See*, *e.g.*, Powers, *supra* note 137; Hammond & Rossi, *supra* note 137; Stein, *supra* note 136; Felix Mormann, *Requirements for a Renewable Revolution*, 38 Ecology L.Q. 903 (2011).

143. *See* Popovich et al., *supra* note 23.

144. *Id.*

145. *See* Motor Vehicle Manufacturers Ass'n v. State Farm, 463 U.S. 29, 13 ELR 20672 (1983) (describing the standards of review when an action is challenged as "arbitrary and capricious"); National Ass'n of Clean Air Agencies v. EPA, 489 F.3d 1221, 1229 (D.C. Cir. 2007). *See also* Jason J. Czarnezki, *An Empirical Investigation of Judicial Decisionmaking, Statutory Interpretation, and the* Chevron *Doctrine in Environmental Law*, 79 U. Colo. L. Rev. 767, 797 (2008) (noting that statutory interpretations by agencies are rarely struck down when courts determine that a statute is ambiguous).

146. At a bare minimum, the agency would need to go through the procedural process necessary to reverse the rule, which will include development of a proposed rule (gathering the data to support the rule, potentially convening scientific advisory bodies, undertaking notice and comment procedures, revising the proposed rule and/or providing an explanation for why the proposal was not revised, and issuing the final rule). Beyond that, although agencies should receive deference when they interpret an ambiguous statute or decide to implement a rule differently, *see* Chevron U.S.A., Inc. v. Natural Resources Defense Council., 467 U.S. 837, 14 ELR 20507 (1984), empirical analysis suggests that courts (particularly the Supreme Court), value agency consistency more than they may honor deference doctrines. *See* Connor N. Raso & William N. Eskridge Jr., Chevron *as a Canon, Not a Precedent: An Empirical Study of What Motivates Justices in Agency Deference Cases*, 110 Colum. L. Rev. 1727, 1781-82 (2010).

147. *See* Raso & Eskridge, *supra* note 146, at 1782 (explaining that courts may be less willing to uphold a change in agency position if parties can show reliance interests on the prior interpretation; *see also* Barnhart v. Walton, 555 U.S. 212, 220 (2002) ("[T]his Court will normally accord particular deference to an agendy interpretation of 'longstanding' duration." (quoting North Haven Bd. of Educ. v. Bell, 456 U.S. 512, 522 n.12 (1982)).

148. This risk is particularly acute due to empirical research that shows that judges and justices tend to interpret statutes and afford agencies deference so as to align with the judges' own ideologies. *See* Raso & Eskridge, *supra* note 146, at 1783-91, 1784 ("Justices systematically support less deferential regimes for policies with which they disagree. . . . As political scientists maintain, ideology matters."). The Trump Administration had appointed 43 judges to the federal courts as of early July 2018, include Supreme Court Justice Gorsuch. Wikipedia, *List of Federal Judges Appointed by Donald Trump*, https://en.wikipedia.org/wiki/List_of_federal_judges_appointed_by_Donald_Trump (last visited July 10, 2018). It appeared likely that his second nominee to the Supreme Court, Brett Kavanaugh, would also become a Supreme Court Justice. *See* Mark Landler & Maggie Haberman, *Brett Kavanaugh Is Trump's Pick for Supreme Court*, N.Y. Times, July 9, 2018, www.nytimes.com/2018/07/09/us/politics/brett-kavanaugh-supreme-court.html. If so, the ideology of the Supreme Court would lean against regulation of GHGs.

lasting legal impacts, even if a successor administration seeks to reverse Trump-era policies.

For example, two major legal issues about the CAA's regulatory scope underlie EPA's deregulatory agenda. The first is whether EPA has the authority (even the obligation) to regulate CO_2 emissions under CAA §111(d)[149]—the section EPA invoked to develop the Clean Power Plan.[150] The second issue involves California's legal authority to set its own vehicle emissions standards for GHGs. Although the Obama Administration concluded that the CAA authorizes regulation in both scenarios,[151] its interpretations of the statute were not fully litigated in court. If the Trump Administration issues final rules repealing the Clean Power Plan or denying California's request to issue new GHG emissions standards for vehicles, those rules would likely be challenged. This would allow the Trump Administration to set the terms of debate and could potentially result in courts affirming the Trump Administration's interpretations.

The nature of the courts' rulings could affect climate regulation for years to come. If a court concludes that the plain language of the statute prohibits regulation of GHGs, future administrations will have much less authority to address climate change. Even if a court concludes that the Trump Administration's interpretation of the CAA is permissible, but not required, it could take years for a future administration to revise its statutory interpretation and produce new regulations. This type of regulatory stickiness is a significant risk of the Trump Administration's regressive climate and energy agenda.

C. *Political Consequences*

The political consequences of the Trump Administration's climate and energy policies may be equally worrisome. Climate change has been an intensely partisan issue in the United States for decades, but it has ramped up under the Trump Administration.[152] The Administration's use of partisan and inflammatory language to discuss climate change and clean energy will likely amplify the partisanship even further.[153]

The partisanship could affect decarbonization efforts long after President Trump leaves office. If businesses and states respond to Trump by doubling down on their investment in fossil fuels, communities dependent upon fossil fuels will become even more resistant to future policies designed to expand renewable energy development and mitigate climate change.[154] Meanwhile, states that supported the environmental policies of the Obama Administration will likely go further to enact their own laws to expand renewable energy and regulate GHG emissions.[155] While sub-federal action is essential to ensure GHG emissions drop, the divide between majority Republican "anti-environmental" states and majority Democrat "pro-environment" states could grow in response to Trump policies.[156]

The impacts on low-income and job-insecure Americans could amplify this already intense partisan divide, pitting groups of Americans against each other. Energy and environmental justice advocates have rightly begun to advocate for more inclusive energy transition policies that will both shield them from unaffordable rate hikes and provide them with some of the direct economic benefits associated with clean energy development.[157] Ensuring a just transition will require careful policy development and economic design, and it will likely cost more than a less-inclusive energy transition will cost.[158]

Meanwhile, workers in the fossil fuel industry will resist changes that will lead to job losses and the need for new job training.[159] Those workers who define themselves according to their employment—as many of us do—will resist changing jobs.[160] When fossil fuel jobs do go away, the economic and political fallout will be that much more intense, particularly if workers have declined to participate in job training and education programs, and their community leaders have therefore been unable or unwilling to attract new businesses or diversify their economies.[161] An energy transition that is attentive to low-income consumers, environmental justice communities, and workers in the fossil fuel industry will be difficult to develop under

149. 42 U.S.C. §7411(d).
150. *See* Clean Power Plan, *supra* note 35.
151. California Waiver Grant, *supra* note 49.
152. *See* Steven Mufson, *Partisan Split on Climate Grows, Even as U.S. Fears Are on the Rise, Poll Finds*, Wash. Post, Mar. 28, 2018, www.washingtonpost.com/news/energy-environment/wp/2018/03/28/partisan-split-on-climate-grows-even-as-u-s-fears-are-on-the-rise-poll-finds/?utm_term=.4126a4cdcc9d (citing Megan Brenan & Lydia Saad, *Global Warming Concern Steady Despite Some Partisan Shift*, Gallup, Mar. 28, 2018, https://news.gallup.com/poll/231530/global-warming-concern-steady-despite-partisan-shifts.aspx?g_source=link_NEWSV9&g_medium=NEWSFEED&g_campaign=item_&g_content=Global%2520Warming%2520Concern%2520Steady%2520Despite%2520Some%2520Partisan%2520Shifts).
153. *See* Salil D. Benegal & Lyle A. Scruggs, *Correcting Misinformation About Climate Change: The Impact of Partisanship in an Experimental Setting*, 148 Climatic Change 61 (2018) (explaining the influence that political leaders may have on climate polarization).
154. At least some of this resistance will likely result from "loss aversion," the dynamic described in behavioral economics in which people are more likely to "feel the pain of losing something more intensely than they do the pleasure of an equivalent gain." Neil Irwin, *Two Words That Could Shape the Politics of the Trade War: Loss Aversion*, N.Y. Times, July 13, 2018, www.nytimes.com/2018/07/13/upshot/trade-war-loss-aversion.html?hpw&rref=upshot&action=click&pgtype=Homepage&module=well-region&region=bottom-well&WT.nav=bottom-well; *see also* Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 Econometrica 263 (1979), *available at* http://www.its.caltech.edu/~camerer/Ec101/ProspectTheory.pdf (last visited July 10, 2018).
155. *See* Allison Fajans-Turner, *U.S. Cities, States and Businesses Lead While Federal Government Falters on Climate Change*, Nexus Media, Apr. 27, 2018, https://nexusmedianews.com/u-s-cities-states-and-businesses-lead-where-federal-government-faltered-on-climate-action-8e086823570c.
156. *See* Mufson, *supra* note 152.
157. *See* Melissa Powers, *An Inclusive Energy Transition: Expanding Low-Income Access to Clean Energy Programs*, 18 N.C. J. L. & Tech. 540 (2017); Shelley Welton, *Grid Modernization and Energy Poverty*, 18 N.C. J. L. & Tech. 565 (2017).
158. Powers, *supra* note 157.
159. *See* Valerie Volcovici, *Awaiting Trump's Coal Comeback, Miners Reject Retraining*, Reuters.com, Nov. 1, 2017, www.reuters.com/article/us-trump-effect-coal-retraining-insight/awaiting-trumps-coal-comeback-miners-reject-retraining-idUSKBN1D14G0.
160. *Id.*
161. *Id.*

ideal circumstances. The more the Trump Administration promises to "bring back coal" or otherwise protect fossil fuel industries, the more protracted and contentious the debates about the energy transition will be.

IV. An Energy Transition Strategy With More Winners and Fewer Losers

The Trump Administration's zero-sum political strategy is potent because it acknowledges that energy decarbonization and climate change mitigation will involve trade offs that policymakers and renewable energy advocates have not sufficiently addressed. For countries to limit temperature increases to no more than 2 degrees Celsius, the U.S. energy sector will need to decarbonize.[162] Fossil fuels currently supply 80% of all U.S. energy, so decarbonization will require most, if not all, fossil fuel production and consumption to end.[163] Companies that produce, transport, and consume fossil fuels must therefore either adapt or dissolve.[164] Coal mining and burning, in particular, will have to stop, and jobs in the coal industry will therefore go away.[165] The coal industry knows this, and it has fought against its inevitable end by waging battles against the so-called war on coal.[166]

By and large, however, policymakers and advocates who support energy decarbonization have not fully acknowledged that there will be losers in the energy transition.[167] Instead, they have promoted an "all-of-the-above" energy policy, supported unviable "clean coal" projects, or focused on the many win-win outcomes that decarbonization will create.[168] While it is true that energy decarbonization will, in the net, produce many more winners than losers, it is also true that there will be losers. The Trump Administration has used this reality to rally the likely losers against the energy transition. In so doing, it has been able to exploit existing partisan divides to further its zero-sum climate and energy political agenda.

To advance a clean energy agenda, policymakers and advocates must face the fact that some individuals and communities will experience negative impacts from the energy transition and should develop concrete plans to mitigate the losses. Rather than pursue tepid policies that fail to substantially reduce GHG emissions, replace fossil fuels with carbon-free energy sources, or provide economic support for the energy transition, policymakers should develop ambitious decarbonization strategies. At the same time, policymakers should recognize that decarbonization could negatively impact many vulnerable communities, including low-income and minority communities that bear disproportionate energy burdens, as well as communities that have become dependent upon the jobs and financial resources that fossil fuel provide. By recognizing that energy decarbonization will create some losers, and by designing policies to protect vulnerable communities from suffering losses that corporations and banks should instead bear, policymakers and advocates could help develop a more equitable and inclusive, and ultimately less partisan, energy transition strategy.

Several legal scholars have proposed strategies for policymakers to use to break through energy partisanship. For example, Garrick Pursley and Hannah Wiseman have suggested that local distributed energy development could avoid partisan barriers.[169] Several scholars and political leaders have recommended carbon tax-and-dividend programs that would tax fossil fuel production and distribution, but refund the taxes to individuals.[170] Hari Osofsky and Jacqueline Peel recently proposed ways to overcome energy partisanship, by focusing on local governments, shifting advocacy away from legislatures and toward the judicial or executive branches, and working directly with non-government actors.[171] The recommendations provided by these and other legal scholars, if adopted, could help ensure that climate mitigation efforts proceed despite the Trump Administration's efforts, by providing direct benefits to individuals, households, and communities who may not otherwise benefit from the energy transition. In addition to these recommendations, the following proposals could help overcome local resistance to the energy transition.

First, state and local governments should design economic incentives to produce direct benefits to communities that may be otherwise seen as hostile to renewable energy development and an energy transition. Many existing tax credits and incentives benefit renewable energy developers, their investors, and renewable energy equipment purchasers.[172] These incentives have helped ensure that developers have access to capital to build their resources, they have enabled renewable electricity to become competitive with fossil resources, and they help overcome sticker shock when

162. *See* U.S. 2017 Climate Science Assessment, *supra* note 111, at 394-403.
163. *See* Daniel Raimi & Alan J. Krupnick, *Decarbonization: It Ain't That Easy*, Resources for the Future (Apr. 20, 2018), www.rff.org/blog/2018/decarbonization-it-ain-t-easy.
164. *See* Mark Fulton et al., Carbon Tracker, The Fossil Fuel Transition Blueprint (2015), file:///Users/powers/Downloads/Blueprint-Carbon-Tracker-230415.pdf.
165. *See id.* at 25 (suggesting that pure coal mining companies, as opposed to diversified ones, will likely not be able to shift to new products).
166. *See* Michael Grunwald, *Inside the War on Coal*, Politico.com, May 26, 2015, www.politico.com/agenda/story/2015/05/inside-war-on-coal-000002.
167. There are, however, some notable examples of labor and environmental organizations working together to develop worker transition strategies. *See*, *e.g.*, Mick Power et al., BlueGreen Alliance, Managing the Environmental Impact of Energy Transition in Pennsylvania Coal Country (2015), https://www.bluegreenalliance.org/wp-content/uploads/2016/08/Managing-the-Employment-Impact-of-Energy-Transition-in-Pennsylvania-Coal-Country-vFINAL.pdf.
168. *See* The White House, All-of-the-Above, *supra* note 85.
169. Garrick B. Pursley & Hannah J. Wiseman, *Local Energy*, 60 Emory L.J. 877, 899-900 (2011).
170. *See, e.g.*, Shi-Ling Hsu, *A Complete Analysis of Carbon Taxation: Considering the Revenue Side*, 65 Buff. L. Rev. 857 (2017); Stephen Sewalk, *Carbon Tax With Reinvestment Trumps Cap-and-Trade*, 30 Pace Envtl. L. Rev. 580 (2013).
171. Osofsky & Peel, *supra* note 104, at 749-92.
172. Roerta F. Mann, *Federal, State, and Local Tax Policies for Climate Change: Coordination or Cross-Purpose?*, 15 Lewis & Clark L. Rev. 369 (2011); Felix Mormann, *Enhancing the Investor Appeal of Renewable Energy*, 42 Envtl. L. 681 (2012); Melissa Powers, *Sustainable Energy Subsidies*, 43 Envtl. L. 211 (2013) (discussing the federal Production Tax Credit).

would-be consumers seek to invest in renewable energy.[173] As renewable energy costs have dropped, it may be time to adjust tax credits and subsidies to address the partisan divide by ensuring that end users and workers are direct economic beneficiaries of energy policies.[174]

For example, many states and local governments offer property tax rebates or similar relief from local taxes to would-be developers or hosts of renewable energy systems.[175] While these rebates aim to keep the costs of development low, they may also deprive local communities of revenues they need. Renewable energy developers also understandably seek to negotiate lease and royalty contracts with landowners that provide the greatest potential benefit to the developers.[176] Moreover, renewable developers (particularly wind developers) may pit landowners against each other, recognizing that development on one parcel of land may preclude development on a nearby parcel due to the wakes created by upwind turbines.[177] These strategies may backfire, however, because they lessen the direct benefits that landowners and local communities may receive from renewable energy development. Rather than seek to minimize the costs paid to local communities and landowners, renewable energy policies should aim to maximize local benefits without raising costs to developers.

Instead of offering local property tax breaks to renewable energy development, policies should ensure that local governments continue to earn full property tax revenues, including increased tax revenues associated with the property improvements made by the renewable infrastructure. To ensure these taxes do not deter renewable energy development, policymakers should create a mechanism for renewable developers to receive tax rebates or other financial incentives paid out of the state's general fund. Policymakers should also produce annual reports disclosing the income local communities have received due to the increased tax revenues. Rather than encourage a race-to-the-bottom in which local governments compete with each other by lowering taxes, they should be encouraged to compete by earning more local revenue from renewable energy development.

State and local policies should also create revenue-sharing programs that compensate landowners who may be impacted by nearby renewable energy facilities, particularly wind farms. Resource "pooling" laws used to compensate owners of common pool resources, such as oil and gas, could serve as templates to compensate downwind property owners who are encumbered from developing their own properties due to upstream turbines and the resulting wakes.[178] States could also enact laws that require developers to compensate landowners for diminished property values caused by visible renewable facilities or noises associated with renewable facility construction and operation.[179] By creating systems that both recognize and compensate for the inconveniences associated with renewable energy development, state and local governments could help ensure that renewable resources provide greater benefits to parties that may otherwise be disadvantaged by renewable development.[180]

State and local governments should also develop policies that provide direct support for low-income individuals, households, and communities to benefit from renewable energy development.[181] They could establish specific incentives supporting renewable energy development on property owned by low-income individuals.[182] For renters, state governments could design a system that provides rebates or bill credits tethered to the amount of renewable energy that is developed within the utility's service territory.[183] Finally, state and local governments could follow the model of Denmark and create wind cooperatives or otherwise enable local residents to become minority owners of wind turbines.[184] As the amount of renewable energy increases, so will the benefits low-income ratepayers receive.

Likewise, state and local governments will need to plan for, and mitigate, the transition costs. The energy transition will be disruptive: combustion engines will become obsolete; gasoline stations will close as vehicle electrification expands; natural gas appliances will need to be replaced; more transmission lines and storage arrays will be sited and developed. To avoid the economic and social

173. *See* Mann, *supra* note 172, at 379-80, 383-84.

174. *See*, *e.g.*, Gary M. Lucas Jr., *Voter Psychology and the Carbon Tax*, 90 Temp. L. Rev. 1, 25 (2017) (explaining study result showing that vague promises of benefits from a tax policy did not make the tax popular, but that study participants became much more supportive of the tax policy when they were told they would all receive a share of the revenue).

175. *See* DSIRE, Programs, http://programs.dsireusa.org/system/program (last accessed July 15, 2018) (list of property tax and incentive programs returned after searching for "property" within the website's search program); Mann, *supra* note 172, at 384 (describing property tax incentives as the "most common type of renewable energy incentive at the state or local government levels").

176. *See* Wyatt Swinford, *Lessons Learned: Avoiding the Hardships of Tribal Mineral Leasing in the Development of Oklahoma Tribal Wind Energy*, 40 Am. Indian L. Rev. 99 (2015-2016) (discussing wind leasing practices and their application to tribal lands); Kimberly E. Diamond & Ellen J. Crivella, *Wake Effects, Wind Rights, and Wind Turbines: Why Science, Constitutional Rights, and Public Policy Issues Play a Crucial Role*, 40 Wm. & Mary Envtl. L. & Pol'y Rev. 813 (2016).

177. *See* Diamond & Crivella, *supra* note 176, at 198-209 (discussing the wake effect), 210-13 (discussing conflicts between adjacent property owners and would-be developers); 237-38.

178. *See* Alexandra B. Klass, *Tax Benefits, Property Rights, and Mandates: Considering the Future of Government Support for Renewable Energy*, 20 J. Envtl. & Sustainability L. 19, (2013) (describing oil and gas pooling laws); Diamond & Crivella, *supra* note 176, at 237-38 (discussing community formation of landowner wind energy associations, which function as community collective bargaining groups to ensure wind leases provide community benefits and receive community support). Although Kimbely Diamond and Ellen Crivella argue against following oil-leasing models for wind development, they support leasing models that aim to provide community benefits.

179. *See* Jake Hays, *Feeling the Noise: Proposed Standards and Alternatives to Wind Energy Nuisance Litigation*, 28 Fordham Envtl. L. Rev. 242, 269-74 (2017).

180. *Id.* (discussing various benefit-sharing and compensation schemes to increase community acceptance of wind energy development).

181. *See*, *e.g.*, Powers, *supra* note 157, at 561-64.

182. *See* Alice Kaswan, *Energy, Governance, and Market Mechanisms*, 72 U. Miami L. Rev. 476, (2017) (describing California programs).

183. *Id.*

184. *See* Mormann, *supra* note 172, at 173; *see also* Stefan Gsanger, *Community Power Empowers*, Discovery News, May 26, 2009, http://news.discovery.com/tech/community-wind-power-opinion.html; *see also* Nicolaj Stenkjaer, *Wind Turbine Co-Ops in Denmark*, Nordic Folkecenter for Renewable Energy (Dec. 2008), http:// www.folkecenter.net/gb/rd/wind-energy/48007/windturbinecoopsdk/.

disruption associated with these developments, particularly in low-income communities, state and local lawmakers need to anticipate the transition costs. They should, at a minimum, use taxes or fees to collect adequate revenue necessary to compensate those members of society who face the greatest risks from the transition. Any approach to the transition that ignores these costs may create an untenable winners v. losers scenario.

These recommendations will also require several changes to our existing energy laws. For example, fossil fuels will need to be taxed—and those taxes will need to be smartly allocated and reserved—to ease the economic shocks that abrupt shifts in energy supply could create.[185] State laws will need to change so that utilities are no longer required to procure or develop "least cost" resources.[186] Some energy service providers will need to restructure or provide alternative services.[187] Rather than wait for disruption to drive these changes, state and local governments must game these changes out in advance, to enable as many winners as possible to emerge from the energy transition.

These changes will also require policymakers to go beyond using neoliberal approaches that have become dominant in environmental and climate change laws.[188] The market-based systems embraced by policymakers focus primarily on easing the regulatory costs of compliance for major polluters and industries, but they do not address the needs of individuals in low-income, environmental justice, or fossil fuel-dependent communities.[189] When these individuals are then harmed by increased energy prices or job losses, wily politicians and their corporate backers are able to turn these individuals against each other through partisan and inflammatory language. Breaking through this partisanship will require effective and inclusive policymaking. Otherwise, zero-sum political rhetoric will continue to dominate our energy and climate agenda.

V. Conclusion

The Trump Administration's climate and energy agenda is based on a narrow and destructive winners-versus-losers political view. The Trump Administration aims to exploit this zero-sum political perspective to favor fossil fuels, at the expense of communities, workers, energy markets, and a livable planet. The urgency of climate change requires progressive policymakers and advocates to change their approach to energy and climate policy design, so that the risks presented by the Trump Administration approach do not result in further partisanship, increased emissions "lock-in," or consequences from climate change that will ultimately make all of us losers.

185. *See* Hsu, *supra* note 170.
186. *See* Shelley Welton, *Electricity Markets and the Social Project of Decarbonization*, 118 Colum. L. Rev. 1067 (2018).
187. *Id.*
188. *See* Kaswan, *supra* note 182.
189. *Id.*