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Author

Lin, Albert C

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Albert C. Lin[†]

The Trump administration wreaked havoc on U.S. climate policy by withdrawing from the Paris Agreement, undoing climate regulations, and undermining the foundation of future regulatory efforts. The Biden administration has begun to reverse the Trump administration's climate rollbacks, but Democrats have struggled to enact legislation that would directly limit carbon emissions. Because federal climate policy remains rooted in agency rules and policies, the election of the next Republican president may herald further policy whiplash. Swings in climate policy waste limited government resources, foster uncertainty, weaken trust in federal climate policy, undermine climate mitigation efforts, and make future responses to climate change even more difficult. Understanding how to safeguard administrative climate policy from future rollbacks is essential.

This Article contends that a suite of factors—including features of administrative law, subsidies for renewables, state climate policies and lawsuits, nongovernmental climate initiatives, incompetence, and happenstance—have all played important roles in buffering federal climate policy from more extensive damage. The Article then considers how to bolster these factors to protect federal climate policies from future efforts to undo them.

[†] Professor of Law, University of California, Davis, School of Law. Thanks to the editors of the *Yale Journal on Regulation* for their editorial work and for sponsoring this symposium. Thanks also to Dean Kevin Johnson, Associate Dean Afra Afsharipour, the U.C. Davis School of Law, and the U.C. Davis Small Grant in Aid of Research program for supporting this project, and to Chad Oliver and Marjan Abubo for their research assistance.

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Introduction

The Trump administration wreaked havoc on U.S. climate policy. President Trump and leading administration officials repeatedly questioned the existence of climate change. The president withdrew the U.S. from the Paris Agreement. Under his direction, the federal administrative state rolled back the Clean Power Plan and nearly every other climate initiative crafted by the Obama administration.

Although climate change has intensified in recent years, the damage to U.S. climate policy from the Trump administration could have been worse. Power plant emissions have declined more quickly than the Clean Power Plan had envisioned. Obama-era auto emission standards are largely being reinstated. President Biden has reversed or promised to reverse the Trump administration's climate rollbacks, and the U.S. is arguably within range of meeting its initial emissions reduction pledge under the Paris Agreement.

None of this erases the fact that the Trump administration undermined progress on battling climate change and harmed U.S. climate policy. Domestically, the United States missed opportunities to hasten the transition away from fossil fuels to renewable energy. Internationally, the United States

undermined cooperation on climate change through its Paris Agreement withdrawal and failed to provide leadership that could have inspired more ambitious climate policies in other nations.

Because federal climate policy is rooted in agency rules and policies, the election of the next Republican president may herald further policy whiplash.[1] Swings in climate policy are problematic: they waste limited government resources, impose uncertainty on business and other stakeholders, weaken trust in federal climate policy and policymakers, and reduce climate mitigation efforts. Equally worrisome, as atmospheric greenhouse gas (GHG) concentrations rise, policy swings make future responses to climate change even more difficult.

Although federal legislation to directly limit carbon emissions, such as through a carbon tax or cap-and-trade regime, would dampen these swings, such legislation is unlikely at this time. For the foreseeable future, the primary locus of U.S. climate policy will remain in the administrative state. Understanding how to safeguard administrative climate policy from future rollbacks is essential.

The Trump administration's climate rollbacks—and options for the Biden administration to counter them—have been documented elsewhere.[2] Likewise, various observers have chronicled resistance to the Trump rollbacks by subnational governments, industry, and others,[3] as well as their rejection by

[1].*See, e.g.,* Jonathan H. Adler, *The Legal and Administrative Risks of Climate Regulation*, 51 ENV'T L. REP. 10485, 10485-87 (2021) (noting that federal climate policy, based on regulatory mandates, is particularly vulnerable to rollbacks when there is a change of administration).

[2].For accounts of the Trump administration rollbacks, see Richard J. Lazarus, *The Super Wicked Problem of Donald Trump*, 73 VAND. L. REV. 1811, 1844-51 (2020); Jessica Wentz & Michael B. Gerrard, *Persistent Regulations: A Detailed Assessment of the Trump Administration's Efforts to Repeal Federal Climate Protections*, COLUM. L. SCH. SABIN CENTER FOR CLIMATE CHANGE L. (2019), http://columbiaclimatelaw.com/files/2019/06/Wentz-and-Gerrard-2019-06-Persistent-Regulations.pdf [https://perma.cc/6C8T-7X9J]. For the Biden administration options, see, for example, Hana Vizcarra & Hannah Perls, *Biden's First 100 Days of Climate Action*, HARV. L. SCH. ENV'T & ENERGY L. PROGRAM (2021), http://eelp.law.harvard.edu/wp-content/uploads/Bidens-First-100-Days-FINAL.pdf [https://perma.cc/98W5-UC96]; Coral Davenport, *Restoring Environmental Rules Rolled Back by Trump Could Take Years*, N.Y. TIMES (Oct. 6, 2021), https://www.nytimes.com/2021/01/22/climate/biden-environment.html [https://perma.cc/3CJV-Q9HP]; *Climate Reregulation in a Biden Administration*, COLUM. L. SCH. SABIN CENTER FOR CLIMATE CHANGE L. (2020), https://climate.law.columbia.edu/sites/default/files/content/Climate%20Reregulation%20in%20a%20Biden%20Administration.pdf [https://perma.cc/N8WW-J8AU].

[3].*See* Vicki Arroyo, *From Paris to Pittsburgh: U.S. State and Local Leadership in an Era of Trump*, 31 GEO. ENV'T L. REV. 433, 435-47 (2019) (discussing subnational climate initiatives in the United States); Lazarus, *supra* note 2, at 1858-59 (discussing auto

most courts.[4] This Article briefly reviews the Trump rollbacks and the Biden responses to date and concludes that the Trump rollbacks appear likely to have a somewhat muted effect.

Existing analyses have focused individually on specific factors that buffered federal climate policy from more extensive damage under the Trump administration. Building on these analyses, this Article contends that a suite of factors—including features of administrative law, subsidies for renewables, state climate policies and lawsuits, nongovernmental climate initiatives, incompetence, and happenstance—have all played important buffering roles. The Article then considers how to bolster these factors to protect federal climate policies from future efforts to undo them.

I. Background

While the Trump administration sought to dismantle nearly every climate initiative of the Obama administration, the Biden administration has begun reversing its predecessor's moves on climate. Notwithstanding the uncertainty resulting from these climate policy shifts, U.S. GHG emissions have started to decrease, though at a far slower rate than needed.

A. Trump's Climate Rollbacks

Within months of taking office, President Trump announced that the United States would withdraw from the Paris Agreement.[5] In the announcement, Trump stated that the United States would immediately "cease all implementation of the non-binding Paris Accord," including promised contributions to the

industry support for Obama motor vehicle climate rules); Korey Silverman-Roati, *U.S. Climate Litigation in the Age of Trump: Full Term*, COLUM. L. SCH. SABIN CENTER FOR CLIMATE CHANGE LAW (2021) (analyzing cases implicating federal climate law or policy).

[4] *See* Bethany A. Davis Noll, *"Tired of Winning": Judicial Review of Regulatory Policy in the Trump Era*, 73 ADMIN. L. REV. 353, 363-68 (2021) (finding the Trump administration success rate in legal challenges to agency regulations to be much lower than prior administrations); Robert L. Glicksman & Emily Hammond, *The Administrative Law of Regulatory Slop and Strategy*, 68 DUKE L.J. 1651, 1669-86 (2019) (chronicling courts' rejection of Trump administration's "regulatory slop" in environmental policy as well as other areas); Lazarus, *supra* note 2, at 1856-57 (discussing judicial rejection of various Trump administration actions relating to climate change).

[5] Jean Chemnick & Evan Lehmann, *The U.S. Is out of the Paris Agreement. What Now?*, E&E NEWS (June 2, 2017, 7:21 AM), https://www.eenews.net/articles/the-u-s-is-out-of-the-paris-agreement-what-now/ [https://perma.cc/M9XS-3J4U]; Letter from Nikki R. Haley, Rep. of the United States, United Nations, to António Guterres, Secretary Gen., United Nations (Aug. 4, 2017) (U.N. Doc. C.N. 464.2017.TREATIES-XXVII.7.d).

Green Climate Fund and efforts to achieve the country's Nationally Determined Contribution (NDC).[6] Though not effective until November 2020, the withdrawal threatened to unravel global cooperation on climate change.[7]

The Trump administration then proceeded to roll back various climate change regulations. The centerpiece of those regulations, the Clean Power Plan,[8] had been projected to reduce GHG emissions from fossil fuel-fired power plants by over 30% (from 2005 levels) by 2030.[9] The plan became tied up in litigation almost as soon as it was finalized,[10] and in 2019 the Trump administration repealed the rule and replaced it with the Affordable Clean Energy (ACE) Rule.[11] The ACE rule was expected to reduce emissions by less than 1% by 2030, as compared to a scenario without the rule.[12]

The Trump administration also weakened rules governing methane emissions from new oil and gas facilities. Studies increasingly demonstrate methane emissions' significant and rising contribution to climate change.[13] The Obama EPA had established standards limiting methane emissions from new oil and gas facilities and imposing leak-detection and repair requirements.[14] The Trump-era revisions eliminated the

[6].*Trump's Speech on Paris Climate Agreement Withdrawal, Annotated*, NPR (June 1, 2017, 6:45 PM), https://www.npr.org/2017/06/01/531090243/trumps-speech-on-paris-climate-agreement-withdrawal-annotated [https://perma.cc/7N8V-AJQW].

[7].Chemnick & Lehmann, *supra* note 5.

[8].Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662 (2015) (codified at 40 C.F.R. pt. 60).

[9].*EPA Fact Sheet: Clean Power Plan by the Numbers*, EPA (2015), https://archive.epa.gov/epa/sites/production/files/2015-08/documents/fs-cpp-by-the-numbers.pdf [https://perma.cc/Q8ZY-F4CQ].

[10].West Virginia v. EPA, 577 U.S. 1126 (2016) (staying the rule pending D.C. Circuit review); Order, West Virginia v. EPA, No. 15-1363 (D.C. Cir. Apr. 28, 2017), http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/case-documents/2017/20170428_docket-15-1363_order.pdf [https://perma.cc/8Z83-6XSC] (suspending the rule to allow EPA to issue a new rule to replace the Clean Power Plan).

[11].Repeal of the Clean Power Plan: Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units; Revisions to Emission Guidelines Implementing Regulations, 84 Fed. Reg. 32,520 (July 8, 2019) (codified at 40 C.F.R. pt. 60).

[12].EPA, REGULATORY IMPACT ANALYSIS FOR THE REPEAL OF THE CLEAN POWER PLAN, AND THE EMISSION GUIDELINES FOR GREENHOUSE GAS EMISSIONS FROM EXISTING ELECTRIC UTILITY GENERATING UNITS 3-11 (2019), https://www.epa.gov/sites/production/files/2019-06/documents/utilities_ria_final_cpp_repeal_and_ace_2019-06.pdf [https://perma.cc/P8SV-DQVC].

[13].Coral Davenport, *Trump Eliminates Major Methane Rule, Even as Leaks Are Worsening*, N.Y. TIMES (Apr. 28, 2021), https://www.nytimes.com/2020/08/13/climate/trump-methane.html [https://perma.cc/8XTB-XSF8].

[14].Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews, 77 Fed. Reg. 49,490 (2012) (to be codified at 40 C.F.R. pts. 60, 63); Oil and Natural Gas Sector: Emission Standards for

requirement that operators limit methane emissions and reduced the frequency with which operators were required to check for leaks.[15]

The Trump administration also watered down the other major Obama-era climate initiative: tightened emission standards for new motor vehicles. The Obama standards would have required automakers to reduce GHG emissions and increase fuel economy 5% each year for model year (MY) 2020-25 vehicles.[16] The Trump administration undid these standards in two steps. First, it revoked a waiver that had authorized California to set standards more stringent than federal standards for GHG emissions from new motor vehicles.[17] Second, it issued the Safe Affordable Fuel Efficient (SAFE) Vehicle Rule, which required only 1.5% annual improvements in fuel economy for MY 2021-26 vehicles.[18]

The Trump administration revoked or sought to revoke other climate regulations, including lightbulb efficiency standards[19] and Bureau of Land Management (BLM) limits on methane emissions from oil and gas operations on federal lands (Methane Waste Prevention Rule).[20] Federal agencies under Trump also postponed or suspended a host of climate-related regulations, including the Methane Waste Prevention Rule,[21] a rule increasing

New, Reconstructed, and Modified Sources, 81 Fed. Reg. 35,824 (2016) (codified at 40 C.F.R. pt. 60).

[15].Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review, 85 Fed. Reg. 57,018 (2020) (codified at 40 C.F.R. pt. 60); Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Reconsideration, 85 Fed. Reg. 57,398 (2020) (codified at 40 C.F.R. pt. 60); *see* Niina H. Farah & Jennifer Hijazi, *Will Trump's Methane Rule Rollback Survive in Court?*, ENERGYWIRE (Aug. 17, 2020, 6:13 AM), https://www.eenews.net/articles/will-trumps-methane-rule-rollback-survive-in-court/ [https://perma.cc/L78X-RU8Q].

[16].2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62,624 (2012) (codified at 40 C.F.R. pts. 85, 86, 600); *Federal Vehicle Standards*, C2ES, https://www.c2es.org/content/regulating-transportation-sector-carbon-emissions/ [https://perma.cc/APE2-GNSW].

[17].*See* The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program, 84 Fed. Reg. 51,310 (2019) (codified at 40 C.F.R. pt. 85). In addition to revoking California's waiver, the Trump administration at the same time issued a rule purporting to preempt any state from adopting or enforcing a law or regulation relating to fuel economy standards. *Id.* at 51,361-62 (amending 49 C.F.R. pts. 531, 533).

[18].*See* The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, 85 Fed. Reg. 24,174 (2020).

[19].*See* Energy Conservation Program: Energy Conservation Standards for General Service Lamps, 84 Fed. Reg. 3,120 (Feb. 11, 2019); Energy Conservation Program: Definition for General Service Lamps, 84 Fed. Reg. 46,661 (Sept. 5, 2019).

[20].Waste Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision of Certain Requirements, 83 Fed. Reg. 49,184 (2018) (codified at 40 C.F.R. pts. 3160, 3170).

civil penalties for violations of fuel economy standards,[22] and a rule disallowing the use of hydrofluorocarbons—which are powerful GHGs—as a substitute for ozone-depleting substances used in aerosols, air conditioners, and refrigerators.[23]

President Trump also revoked various executive orders relevant to climate change. These included orders aimed at reducing GHG emissions from military activities and government buildings.[24] More significantly, the Trump administration undermined agencies' ability to account for damages from climate change by withdrawing guidance regarding the social cost of carbon.[25] Ultimately, the Trump administration instituted a social cost of carbon of $1-$7/ton, far below the $52/ton figure used at the end of the Obama administration.[26]

These rollbacks aside, the Trump administration took various steps to affirmatively promote fossil-fuel energy development. Days after taking office, President Trump directed the expedited approval of federal permits necessary to complete the Dakota Access and Keystone XL pipelines.[27] The Army Corps of Engineers promptly issued an easement enabling the completion of the Dakota Access pipeline, setting aside a decision from the waning days of the Obama administration to consider alternative routes.[28] President Trump subsequently issued a permit authorizing construction of the Keystone XL pipeline, reversing a permit denial by his predecessor.[29] Additional actions reversed the withdrawal of offshore tracts in

[21].Waste Prevention, Production Subject to Royalties, and Resource Conservation; Delay and Suspension of Certain Requirements, 82 Fed. Reg. 58,050 (2017).

[22].NHTSA, Civil Penalties, 81 Fed. Reg. 95,489 (2016).

[23].Protection of Stratospheric Ozone: Notification of Guidance and a Stakeholder Meeting Concerning the Significant New Alternatives Policy (SNAP) Program, 83 Fed. Reg. 18,431, 18,432 (Apr. 27, 2018).

[24].Exec. Order No. 13,783, 82 Fed. Reg. 16,093, 16,093 (2017); Exec. Order No. 13,834, 83 Fed. Reg. 23,771, 23,771 (2018); *see* Lazarus, *supra* note 2, at 1844.

[25].Exec. Order No. 13,783, 82 Fed. Reg. at 16,095-96; Lazarus, *supra* note 2, at 1844-45.

[26].Jean Chemnick, *Carbon Was $1 under Trump. It's About to Skyrocket*, CLIMATEWIRE (Feb. 17, 2021), https://epic.uchicago.edu/news/carbon-was-1-under-trump-its-about-to-skyrocket/ [https://perma.cc/2675-DETY]; Stephen Lee & Ellen M. Gilmer, *Key to Biden Climate Agenda: The Social Cost of Carbon Explained*, BLOOMBERG L. (Jan. 21, 2021, 10:31 AM), https://news.bloomberglaw.com/environment-and-energy/key-to-biden-climate-agenda-the-social-cost-of-carbon-explained [https://perma.cc/BBZ3-57Y9].

[27].Construction of the Dakota Access Pipeline, 82 Fed. Reg. 8,661 (Jan. 30, 2017); Construction of the Keystone XL Pipeline, 82 Fed. Reg. 8,663 (Jan. 30, 2017).

[28].Ellen M. Gilmer, *With Trump's Blessing, Pipeline Can Go Forward*, ENERGYWIRE (Feb. 9, 2017, 7:23 AM) [https://perma.cc/633H-FAD6]; Jack Healy & Nicholas Fandos, *Protestors Gain Victory in Fight over Dakota Access Oil Pipeline*, N.Y. TIMES (Dec. 4, 2016), https://www.nytimes.com/2016/12/04/us/federal-officials-to-explore-different-route-for-dakota-pipeline.html#:~:text=%E2%80%94%20The%20Standing%20Rock%20Sioux%20Tribe,section%20of%20the%20Missouri%20River [https://perma.cc/Y92S-8YQ8].

the Arctic and Atlantic Oceans from oil and gas leasing.[30] The Trump Interior Department terminated a programmatic environmental review of the federal coal leasing program, as well as a leasing moratorium that had been put in place pending completion of the review.[31] And in August 2020, the Bureau of Land Management adopted a decision that made the Coastal Plain of the Arctic National Wildlife Refuge (ANWR) available for oil and gas leasing.[32]

Finally, the Trump administration sought to undermine scientific inquiry and science-based decision making, particularly pertaining to climate science.[33] The administration altered the composition of EPA scientific advisory committees or reduced their influence, interfered politically with the work of agency scientists, and drove scientists and other agency personnel out of the federal government.[34] In some instances, agencies were no longer required to consider climate change in their planning and management processes.[35] The Trump administration also sought to impede future air pollution regulation by imposing additional procedural requirements on the use of cost-benefit analysis in Clean Air Act rulemakings.[36]

If the Trump climate rollbacks had survived, they would have resulted in the release of at least an additional 1.8 gigatons (Gt) of CO_2 by 2035, according to one estimate.[37] Over half of those emissions would have come from the rollback of fuel economy standards, and approximately one-third from the

[29].Authorizing Trans Canada Keystone Pipeline, L.P., to Construct, Connect, Operate, and Maintain Pipeline Facilities at the International Boundary Between the United States and Canada, 84 Fed. Reg. 13,101 (Apr. 3, 2019).

[30].Exec. Order No. 13,795, 82 Fed. Reg. 20,815 (May 3, 2017); Nathanial Gronewold & Margaret Kriz Hobson, *Trump's Order Revives Thirst for Arctic, Atlantic Oil*, ENERGYWIRE (May 1, 2017, 7:08 AM) [https://perma.cc/V6WH-72CD].

[31].U.S. Dep't of the Interior, Secretarial Order No. 3348, Concerning the Federal Coal Moratorium (2017).

[32].BUREAU OF LAND MGMT., DOI-BLM-AK-0000-2018-0002-EIS, COASTAL PLAIN OIL AND GAS LEASING PROGRAM RECORD OF DECISION 1-3 (2020), https://eplanning.blm.gov/public_projects/102555/200241580/20024135/250030339/Coastal%20Plain%20Record%20of%20Decision.pdf [https://perma.cc/3VRL-SPPQ].

[33].*See* Albert C. Lin, *President Trump's War on Regulatory Science*, 43 HARV. ENV'T L. REV. 247 (2019).

[34].*Id.* at 262-65, 266-68; Lazarus, *supra* note 2, at 1845-46.

[35].Lazarus, *supra* note 2, at 1846-47.

[36].Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process, 85 Fed. Reg. 84,130 (Dec. 23, 2020) (codified at 40 C.F.R. pt. 83).

[37].Hannah Pitt, Kate Larson & Maggie Young, *The Undoing of US Climate Policy: The Emissions Impact of Trump-Era Rollbacks*, RHODIUM GROUP (Sept. 17, 2020), https://rhg.com/research/the-rollback-of-us-climate-policy/ [https://perma.cc/H8UD-BG8W].

rollback of oil and gas methane standards.[38] The impact of many regulations was initially limited but would have grown over time with the installation of more carbon-polluting equipment.[39]

B. Biden's Reversals

Just as President Trump undertook climate policy rollbacks on numerous fronts, President Biden has responded in kind. On his first day in office, Biden moved to rejoin the Paris Agreement, and the United States officially became a party again one month later.[40] The Biden administration has since revised the United States' NDC under the agreement, committing the United States to reduce GHG emissions 50%-52% by 2030 from 2005 emissions levels.[41]

Equally significant, President Biden issued an executive order that reversed or initiated the reversal of many Trump-era climate policies.[42] Executive Order 13,990 revoked the Presidential permit for the Keystone XL pipeline, reinstated an Obama-era withdrawal of offshore Arctic tracts from oil and gas drilling, and established a temporary moratorium on leasing in the ANWR Coastal Plain, pending further review.[43] The order also re-established a working group on the social cost of carbon and directed it to publish an interim social cost of carbon within 30 days and a final social cost of carbon within one year.[44] Relying on an Obama-era formula, the Biden administration

[38].Jean Chemnick, *Nearly 2 Gigatons of Extra CO_2 Due to Trump—Report*, GREENWIRE (Sept. 18, 2020, 1:25 PM) [https://perma.cc/CLC3-UGPB], (discussing the Rhodium Group study).

[39].Pitt et al., *supra* note 37.

[40].Letter from António Guterres, Secretary Gen., United Nations, to Abdulla Shahid, President of the Gen. Assemb., United Nations (Jan. 20, 2021) (U.N. Doc. C.N.10.2021.TREATIES-XXVII.7.d); Press Release, White House, Paris Climate Agreement (Jan. 20, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/paris-climate-agreement/ [https://perma.cc/W7EY-Q564].

[41].*United States Nationally Determined Contribution, Reducing Greenhouse Gases in the United States: A 2030 Emissions Target*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (Apr. 2021), https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20States%20of%20America%20First/United%20States%20NDC%20April%2021%202021%20Final.pdf [https://perma.cc/4YJE-C34U].

[42].Exec. Order No. 13,990, 86 Fed. Reg. 7,037 (Jan. 25, 2021).

[43].*Id*. at §§ 4, 6. The Keystone XL developer subsequently cancelled the project. *See* Alec Jacobson, *Keystone XL Is Dead. Now What?*, NAT'L GEOGRAPHIC (June 10, 2021), https://www.nationalgeographic.com/environment/article/keystone-xl-pipeline-dead-now-what [https://perma.cc/DEG2-LADU]. To address alleged legal deficiencies and more comprehensively analyze environmental impacts, Interior Secretary Haaland issued an order halting activities in ANWR relating to the Coastal Plain oil and gas leasing program. U.S. Dep't of the Interior, Secretarial Order No. 3401 (2021).

[44].Exec. Order No. 13,990, § 5.

subsequently adopted an interim social cost of carbon of $51 per metric ton.[45]

The process of reversing Trump-era rules is underway. While numerous rules are being reconsidered, Executive Order 13,990 singled out rules governing methane emissions from new oil and gas operations, vehicle fuel economy standards, and energy efficiency.[46] Congress has already reinstated regulation of methane emissions from new oil and gas operations through a Congressional Review Act resolution.[47] And the Biden administration rescinded the rule imposing additional procedural requirements on EPA's use of cost-benefit analysis in Clean Air Act rulemakings.[48]

The Biden administration also has strengthened new vehicle emission standards. In December 2021, the National Highway Traffic Safety Administration (NHTSA) repealed the Trump-era rule preempting California from setting more stringent GHG emissions standards, and in March 2022, EPA reissued a waiver allowing California to set such standards.[49] Relatedly, NHTSA and EPA replaced the relatively anemic SAFE standards with tightened emissions and fuel economy standards resembling those negotiated by California with several major carmakers.[50]

[45].Jean Chemnick, *Biden Raises Key Metric for Greenhouse Gases*, CLIMATEWIRE (Mar. 1, 2021), https://epic.uchicago.edu/news/biden-raises-key-metric-for-greenhouse-gases/[https://perma.cc/RW6T-WHK6]; INTERAGENCY WORKING GRP. ON SOC. COST OF GREENHOUSE GASES, U.S. GOV'T, TECHNICAL SUPPORT DOCUMENT: SOCIAL COST OF CARBON, METHANE, AND NITROUS OXIDE INTERIM ESTIMATES UNDER EXECUTIVE ORDER 13990 (2021). In February 2022, a federal district court issued a preliminary injunction blocking the Biden administration from applying its interim social cost of carbon. Maxine Joselow, *Court Ruling on Social Cost of Carbon Throws a Wrench into Biden's Climate Plans*, WASH. POST (Feb. 22, 2022), https://www.washingtonpost.com/politics/2022/02/22/court-ruling-social-cost-carbon-throws-wrench-into-biden-climate-plans/ [https://perma.cc/44FU-TL48].

[46].Exec. Order No. 13,990, § 2.

[47].S.J. Res. 14, 117th Cong. (2021) (enacted); Kelsey Brugger & Carlos Anchondo, *Congress Kills Trump Methane Rollback*, E&E NEWS (June 25, 2021, 1:37 PM), https://www.eenews.net/stories/1063735867 [https://perma.cc/W7F2-22SS]; *see also* Emma Dumain & Kelsey Brugger, *Why Is the House Taking So Long to Undo Trump Methane Rule?*, E&E DAILY (May 25, 2021, 7:05 AM), https://www.eenews.net/articles/why-is-the-house-taking-so-long-to-undo-trump-methane-rule/ [https://perma.cc/22AY-YLB9].

[48].Rescinding the Rule on Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process, 86 Fed. Reg. 26,406 (2021) (to be codified at 40 C.F.R. pt. 83).

[49].Corporate Average Fuel Economy (CAFE) Preemption, 86 Fed. Reg. 74,236 (Dec. 29, 2021) (repealing the rule preempting California standards effective January 28, 2022); California State Motor Vehicle Pollution Control Standards; Advanced Clean Car Program; Reconsideration of a Previous Withdrawal of a Waiver of Preemption; Notice of Decision, 87 Fed. Reg. 14,332 (Mar. 14, 2022) (rescinding EPA's 2019 withdrawal of the waiver previously granted to California).

[50]. Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks, __ Fed. Reg. __ (Mar. 31, 2022); Revised 2023 and Later Model Year

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Changing course on other rules will take more time. President Biden has announced a goal of eliminating GHG emissions from U.S. power plants by 2035.[51] One possible mechanism for achieving that goal would be for Congress to establish a national clean energy standard.[52] In the absence of legislative action, however, regulating power-plant GHG emissions through the Clean Air Act will be critical. The D.C. Circuit invalidated the Affordable Clean Energy Rule at the close of the Trump administration, opening the door to reinstituting the Clean Power Plan or adopting a new regulatory approach.[53] Although the Biden EPA is yet to announce how it will regulate GHG emissions from power plants, it declined to reinstate the Clean Power Plan and will likely take a more aggressive approach.[54] Options include regulating power plants by category and focusing on potential "within the fenceline" emissions reductions, regulating "beyond the fenceline" in a manner analogous to the Clean Power Plan, or even regulating GHGs as criteria pollutants under Section 109 of the Clean Air Act.[55]

The Biden administration's climate policy moves have also included executive orders explicitly focused on climate. One

Light-Duty Vehicle Greenhouse Gas Emission Standards, 86 Fed. Reg. 74,434 (Dec. 30, 2021); *Fact Sheet: President Biden Announces Steps to Drive American Leadership Forward on Clean Cars and Trucks*, WHITE HOUSE (Aug. 5, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/05/fact-sheet-president-biden-announces-steps-to-drive-american-leadership-forward-on-clean-cars-and-trucks/ [https://perma.cc/2UHE-N83N].

[51].Jeff Brady, *How Does the Biden Administration Plan To Reach Its Clean Energy Goal?*, NPR (Apr. 14, 2021, 5:04 AM), https://www.npr.org/2021/04/14/987099796/how-does-the-biden-Administration-plan-to-reach-its-clean-energy-goal [https://perma.cc/DHN7-AVJ4].

[52].Scott Waldman, *Biden's Climate Bet Rests on a Clean Electricity Standard*, CLIMATEWIRE, (May 10, 2021, 6:45 AM) [https://perma.cc/8NC8-ZMWK].

[53].Am. Lung Ass'n v. Env't Prot. Agency, 985 F.3d 914 (D.C. Cir. 2021). The Supreme Court's grant of certiorari in this case, however, has raised doubts about the range of regulatory options available to the Biden EPA. West Virginia v. EPA, No. 20-1530, *cert. granted*, Oct. 29, 2021; *see* Coral Davenport, *Supreme Court Will Hear Biggest Climate Change Case in a Decade*, N.Y. TIMES (Feb. 28, 2022), https://www.nytimes.com/2022/02/27/climate/supreme-court-will-hear-biggest-climate-change-case-in-a-decade.html [https://perma.cc/YU39-9EKU]; Niina H. Farah & Pamela King, *What the Supreme Court's Move Means for EPA Climate Rules*, ENERGYWIRE (Nov. 1, 2021, 6:10 AM), https://www.eenews.net/articles/what-the-supreme-courts-move-means-for-epa-climate-rules/ [https://perma.cc/55PN-X9QV].

[54].Memorandum from Joseph Goffman, Acting Assistant Admin'r for EPA, to EPA Reg'l Admin'rs, Status of Affordable Clean Energy Rule and Clean Power Plan (Feb. 12, 2021), https://www.eenews.net/assets/2021/02/16/document_ew_12.pdf [https://perma.cc/6B6G-4FML]; Jean Chemnick, *Biden Won't Revive Obama's Clean Power Plan. So Now What?*, E&E NEWS (Feb. 10, 2021), https://governorswindenergycoalition.org/biden-wont-revive-obamas-clean-power-plan-so-now-what/ [https://perma.cc/GGV8-L2CE].

[55]. Karl Coplan, *The Clean Power Plan Is Dead. Long Live the Clean Power Plan!*, JDSUPRA (Mar. 4, 2021), https://www.jdsupra.com/legalnews/the-clean-power-plan-is-dead-long-live-6613871/ [https://perma.cc/7M7V-5VMV].

order directs the integration of climate-change considerations into U.S. foreign-policy and national-security decisions and the use of federal procurement authorities to promote clean electricity and vehicles.[56] A subsequent order directs the federal government to achieve 100% carbon pollution-free electricity by 2030, to buy only zero-emission vehicles by 2035, and to reduce GHG emissions from federal buildings 50% by 2032.[57] A Biden order also instructed the Secretary of the Interior to "pause all new oil and natural gas leases on public lands or in offshore waters" to allow reconsideration of federal oil and gas leasing practices in light of climate change.[58] Accordingly, Interior Secretary Deb Haaland revoked Trump-era policies promoting fossil fuel development on the federal lands[59] and established a climate task force to conduct a department-wide review of leasing and permitting.[60] However, on June 15, 2021, a federal district court granted a preliminary injunction against the pause on new oil and gas leases.[61]

C. Net Effects of Rollbacks and Reversals

It is too soon to determine the net effect of the Trump administration climate policies and their reversal under Biden. GHG emissions trend data suggest that the Trump-era policies had a modest impact—but the same also might be said of federal GHG regulation to date. Total U.S. GHG emissions peaked in 2007 and decreased 13% between 2005 and 2019.[62] Thanks largely to the pandemic, GHG emissions dropped another 10.3% in 2020, leaving 2020 emissions 21% below 2005 levels.[63] The United States' Paris Agreement pledge to reduce

[56].Exec. Order No. 14,008, Tackling the Climate Crisis at Home and Abroad, 86 Fed. Reg. 7,619, 7,621, 7,624 (Jan. 27, 2021).

[57].Exec. Order No. 14,057, Executive Order on Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability, 86 Fed. Reg. 70,935 (Dec. 8, 2021).

[58].Exec. Order No. 14,008, § 208, 86 Fed. Reg. at 7,624-25.

[59].U.S. Dep't of the Interior, Secretarial Order No. 3398 (2021).

[60].*Id*.

[61].Louisiana v. Biden, No. 2:21-CV-00778, 2021 WL 2446010 (W.D. La. June 15, 2021) (preliminarily enjoining the Biden administration from pausing new oil and gas leases on public lands pursuant to Executive Order 14,008).

[62].EPA, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS 1990-2019, at 2-1 (2021) [hereinafter EPA, INVENTORY]; Respondent's Motion for Partial Stay of Issuance of the Mandate at 4, Am. Lung Ass'n v. EPA, No. 19-1140 (D.C. Cir. Feb. 12, 2021), Doc. No. 1885168. http://climatecasechart.com/climate-change-litigation/wp-content/uploads/sites/16/case-documents/2021/20210212_docket-19-1140_motion.pdf [https://perma.cc/Y95L-9BFN].

[63].Kate Larsen, Hannah Pitt, & Alfredo Rivera, *Preliminary US Greenhouse Gas Emissions Estimates for 2020*, RHODIUM GROUP (Jan. 12, 2021),

GHG emissions 26-28% below 2005 levels by 2025 appears within reach, although emissions are likely to rebound in the near term as pandemic restrictions ease.[64]

GHG emissions from electric power dropped by one-third between 2005 and 2019, slightly exceeding the reductions that the Clean Power Plan—which never took effect—had hoped to achieve by 2030.[65] The downward trend, which persisted during the Trump administration,[66] is expected to continue as low natural gas prices and competitive renewable energy costs further drive out coal-generated electricity.[67] In publishing the ACE rule, the Trump EPA predicted that both the Clean Power Plan and its replacement would have had limited effects.[68] With respect to the Clean Power Plan, EPA observed, "Current market trends would result in compliance with the CPP targets with little or no additional effort by states and utilities. In other words, the electric sector is already on track to meet the goals of the CPP, even though it is not being implemented."[69] EPA similarly projected that the impacts of the ACE rule would be "small compared to the recent market-driven changes that have occurred in the electric sector."[70] Consistent with these observations regarding the limited impact of EPA's regulations on the already declining coal industry, investors reacted minimally to the CPP and other key events in the alleged "war on coal."[71] Indeed, the decline of U.S. coal use accelerated during the Trump administration.[72]

The back-and-forth on auto emission standards appears likely to have a modest impact as well. In defiance of the Trump rollbacks, California and several major automakers agreed to

https://rhg.com/research/preliminary-us-emissions-2020/ [https://perma.cc/7RD3-B84H]. Approximately half of the 2020 decline was attributable to pandemic-related reduced emissions from the transportation sector, and much of the remaining decline from the ongoing shift from coal to renewables and natural gas in electricity generation. *Id.*

64. *Id.*

65. EPA, INVENTORY at 2-34 tbls.2-11.

66. *Id*.

67. Miranda Willson, *U.S. to Eliminate Coal Electricity in 12 Years—Report*, ENERGYWIRE, (Feb. 3, 2021, 7:08 AM) [https://perma.cc/8NC8-ZMWK].

68. EPA, FACT SHEET, REGULATORY IMPACT ANALYSIS FOR THE AFFORDABLE CLEAN ENERGY RULE (ACE) AND CLEAN POWER PLAN REPEAL (2019), https://www.epa.gov/sites/production/files/2019-06/documents/ace_ria_fact_sheet_6.18.19_final.pdf [https://perma.cc/P2ZH-YMU5].

69. *Id.*

70. *Id.*

71. Cary Coglianese & Daniel E. Walters, *Whither the Regulatory "War on Coal"? Scapegoats, Saviors, and Stock Market Reactions*, 47 ECOLOGY L.Q. 1, 32-40, 61-62, 65 (2020).

72. Alexandra B. Klass, *Energy Transitions in the Trump Administration and Beyond*, 51 ENV'T. L. 241, 249-50 (2021).

3.7% annual emissions reductions, and the Biden standards build on that agreement.[73] The new federal standards reduce annual emissions between 5% and 10% in MY 2023-2026 and boost average fuel economy to 49 miles per gallon (mpg) by 2026.[74] The standards are slightly less ambitious than the Obama-era rules, which contemplated an average fuel economy of 54.5 mpg by 2025.[75] However, they are significantly more stringent than the Trump administration standards, which would have required an average fuel economy of only 40 mpg by 2026.[76] Biden has also ordered the drafting of more demanding standards applicable beyond MY 2026 and signed an executive order calling for electric vehicles to make up at least half of all vehicle sales by 2030.[77] Even with these developments, the effects of the Trump vehicle emission rollbacks will persist as less fuel efficient MY 2021-26 vehicles remain on the road.[78]

[73].Scott Waldman, *Biden Presses Automakers for Emissions Deal*, CLIMATEWIRE (Mar. 17, 2021, 6:59 AM) [https://perma.cc/Y7HJ-TE3A]; Arianna Skibell, *Biden Car Rules Won't Account for Trump-Era CO_2*, CLIMATEWIRE (July 28, 2021, 5:54 AM), https://www.eenews.net/articles/biden-car-rules-wont-account-for-trump-era-co2/ [https://perma.cc/7CAB-TRFB].

[74]. Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emission Standards, 86 Fed. Reg. at 74438; Arianna Skibell, *Biden Unveils Strongest Fuel Efficiency Rule Yet*, GREENWIRE (Apr. 1, 2022); Michael Laris, *Administration Finalizes Rule to Raise Fuel Standards for New Cars, Light Trucks by* 2026, WASH. POST (Apr. 1, 2022), https://www.washingtonpost.com/transportation/2022/04/01/tailpipe-pollution-fuel-efficiency/. The 49 mpg standard is based on lab testing; real world fuel economy is estimated to be approximately 25% lower. *Id.*

[75].Coral Davenport, *Biden, in a Push to Phase Out Gas Cars, Tightens Pollution Rules*, N.Y. TIMES (Nov. 9, 2021), https://www.nytimes.com/2021/08/05/climate/biden-tailpipe-emissions-electric-vehicles.html [https://perma.cc/NJZ2-XDFU]; Neal E. Boudette & Coral Davenport, *G.M. Will Sell Only Zero-Emission Vehicles by 2035*, N.Y. TIMES (Oct. 1, 2021), https://www.nytimes.com/2021/01/28/business/gm-zero-emission-vehicles.html [https://perma.cc/UA26-TSCM; Maxine Joselow, *Early Test for Biden: Car Emissions Rules*, CLIMATEWIRE (Nov. 30, 2020, 7:01 AM), https://www.eenews.net/articles/early-test-for-biden-car-emissions-rules/ [https://perma.cc/9N5D-ZPFD]. Indeed, because the agreements with California allow automakers to give extra weight to electric vehicles in determining whether they meet their required emission reductions, those agreements may provide only 2/3 of the pollution benefit of the Obama-era standards. *See* Avi Mersky, *American Council for an Energy Efficient Economy, Biden Needs to Set Strong Clean Car Standards* (Mar. 23, 2021), https://www.aceee.org/blog-post/2021/03/biden-needs-set-strong-clean-car-standards [https://perma.cc/F9D7-CM2G].

[76].Maxine Joselow, *Early Test for Biden; Car Emissions Rules*, CLIMATEWIRE, (Nov. 30, 2020, 7:01 AM), https://www.eenews.net/articles/early-test-for-biden-car-emissions-rules/ [https://perma.cc/W32F-VBHJ].

[77].Davenport, *supra* note 75; Exec. Order No. 14,037, 86 Fed. Reg. 43,583 (Aug. 5, 2021).

[78].Klass, *supra* note 72, at 258 (contrasting the electricity sector, where utilities make long-term plans "based on a mix of sector economics, predicted technological development, and a near certainty that carbon limits will be imposed on their fleets" with the transportation sector, where emissions result from "collective decisions of billions of consumers" and automakers who "are planning for future regulation but also responding to more immediate regulatory conditions as well as current consumer demands for larger cars and SUVs in the face of low gasoline prices").

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Trump's methane rollbacks could have had a significant impact, producing nearly 600 million tons of CO_2 equivalent emissions by 2035.[79] However, Congress's repudiation of EPA's rollback revived the agency's 2016 regulation of new oil and gas sources—including those originally subject to the rule.[80] Meanwhile, BLM's Methane Waste Prevention Rule remains in legal limbo: the rollback of the rule and the rule itself were invalidated by different courts, and the Biden administration has yet to reveal its plans on the matter.

Overall, the Trump rollbacks appear likely to have a relatively muted effect. But their limited impact may be partially attributable to the original standards' limited scope.[81] Consider the three major Obama EPA climate initiatives: the Clean Power Plan, vehicle emission standards, and methane regulation. Two of these initiatives focused exclusively on new pollution sources. Vehicle emission standards established by EPA apply only to new motor vehicles and do nothing to address carbon emitted by the hundreds of millions of vehicles already on the road. The Obama EPA's methane rules applied only to new oil and gas facilities; analogous rules for existing oil and gas facilities were considered but never finalized.[82] Finally, as noted above, market forces—catalyzed by governmental grants, subsidies, and tax policies that incentivized clean-energy investments[83]—yielded significant reductions in power-plant emissions and rendered the Clean Power Plan essentially superfluous.

None of this is to suggest that the Trump administration did not damage U.S. climate change efforts. The Trump administration slowed the decline of U.S. GHG emissions and

[79].Pitt et al., *supra* note 37.

[80].EPA, CONGRESSIONAL REVIEW ACT RESOLUTION TO DISAPPROVE EPA'S 2020 OIL AND GAS POLICY RULE QUESTIONS AND ANSWERS (June 30, 2021), https://www.epa.gov/system/files/documents/2021-07/qa_cra_for_2020_oil_and_gas_policy_rule.6.30.2021.pdf [https://perma.cc/YHG4-DGKK].

[81].*Cf.* Pitt et al., *supra* note 37 (suggesting that "market forces have made many Obama-era policies now seem weak as originally designed"); Luke Kemp, *Limiting the Climate Impact of the Trump Administration*, 3 PALGRAVE COMMC'NS, article no. 9, at 4 (2017) ("The [climate] achievements of Obama are modest at best and had little lock-in effect.").

[82].Mike Lee, *Groups Press EPA To Enact Tough Methane Emission Rules*, GREENWIRE (June 4, 2021, 6:02 AM), https://www.eenews.net/articles/the-key-for-epa-rules-inside-the-methane-tech-revolution/ [https://perma.cc/58KM-53FM]; EPA, BACKGROUND ON THE INFORMATION REQUEST FOR THE OIL AND NATURAL GAS INDUSTRY, CONTROLLING AIR POLLUTION FROM THE OIL AND GAS INDUSTRY (Feb. 24, 2020), https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/background-information-request-oil-and [https://perma.cc/TV49-D49Q].

[83].William W. Buzbee, *Federalism Hedging, Entrenchment, and the Climate Challenge*, 2017 WIS. L. REV. 1037, 1081-82.

undermined international cooperation on climate change.[84] Moves that locked in infrastructure—such as the permit for the Dakota Access pipeline—could have long-lasting impacts.[85] The cancellation of U.S. contributions to the Green Climate Fund could similarly influence developing countries' long-term energy infrastructure choices.[86] And the rollback of methane regulations for *new* oil and gas operations was more significant than it initially appears because it enabled EPA to avoid regulating methane emissions from *existing* oil and gas operations.[87] Assessing the damage to climate mitigation efforts is further complicated by the fact that we do not know what more ambitious climate policies a Hilary Clinton presidency might have adopted.[88]

In the end, President Trump arguably had more interest in the optics of his climate policies than their actual effects. The purported "war on coal" and Paris Agreement served as politically useful scapegoats for his "America First" platform and efforts to court rural and blue-collar voters.[89] Trump regularly touted his affinity for coal, and his administration's deregulatory moves aimed at reviving the coal industry. Yet initial actions to delay or suspend environmental rules were undertaken hastily and without regard to fundamental legal requirements.[90] Subsequent actions to replace the rules often struggled to meet established procedural and substantive administrative-law principles.[91] And Trump's EPA acknowledged the limitations of its actions even while the president boasted of its efforts.[92]

[84].Lazarus, *supra* note 2, at 1853.

[85].Kemp, *supra* note 81, at 2 tbls.1, 3 (suggesting that the pipeline had the potential to lock in fifty years of additional emissions of up to 101 megatons of CO_2 per year).

[86].*Id.* at 4.

[87].42 U.S.C. § 7411(d)(1)(A) (2018); 81 Fed. Reg. 35,831 (June 3, 2016) (explaining that in finalizing the methane standards for new sources, EPA's "next step" in reducing methane emissions from the oil and gas industry would involve regulating emissions from existing sources).

[88].Pitt et al., *supra* note 37 ("A climate-friendly successor would likely have increased the ambition of Obama's rules.").

[89].Coglianese & Walters, *supra* note 71, at 69; Michael Grunwald, *Trump's Love Affair with Coal*, POLITICO (Oct. 15, 2017), https://www.politico.com/magazine/story/2017/10/15/trumps-love-affair-with-coal-215710/ [https://perma.cc/6UVV-BYQK]; *see generally* Philip G. Lewin, *"Coal Is Not Just a Job, It's a Way of Life": The Cultural Politics of Coal Production in Central Appalachia*, 66 SOC. PROBLEMS 51 (2019) (explaining the support for coal among residents of Appalachia in terms of coal heritage, which "conveys environmentalism as an attack on Appalachians' right to economic opportunity, their role in the national division of labor, and their moral worth").

[90].*See infra* Section III.B.2.

[91].Lazarus, *supra* note 2, at 1855-59.

[92].Coglianese & Walters, *supra* note 71, at 5-6.

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II. Climate Policy Swings

A. Administrative Climate Policy

More than ever, presidents rely on the administrative state rather than legislative action to make policy.[93] Presidential administration has grown in response to legislative gridlock, divided government, and partisan polarization.[94] Consequently, many federal policies are subject to dramatic swings when a president from another political party takes office.[95]

Federal environmental policy is no exception to these trends. Significant environmental legislation has been rare in recent decades.[96] In the climate arena, legislation could clarify federal authority to regulate GHG emissions, provide direction to regulatory agencies, and reduce the legal risks of federal action.[97] Yet no statute directly spells out such authority.[98] The current approach relies instead on the Clean Air Act—a statute "not especially well designed for controlling GHG pollution."[99] Under this approach, climate policy attracts legal challenges and is subject to dramatic swings when party control of the presidency changes.[100]

Agency rules and decisions, presidential orders, and other executive actions are today's primary vehicles for federal climate policy. Significant policies are often established through rulemaking, which may take years for controversial or complex rules.[101] Following the recognition of EPA's Clean Air Act authority to regulate GHGs in *Massachusetts v. EPA*, EPA proceeded to regulate GHGs in a stepwise manner under various

[93].Jessica Bulman-Pozen, *Administrative States: Beyond Presidential Administration*, 98 TEX. L. REV. 265, 270 (2019).

[94].*Id.* at 272, 276; Jody Freeman & David B. Spence, *Old Statutes, New Problems*, 163 U. PA. L. REV. 1, 14 (2014).

[95].Bulman-Pozen, *supra* note 93, at 280.

[96].Freeman & Spence, *supra* note 97, at 8.

[97].Adler, *supra* note 1, at 10487, 10491-92.

[98].Freeman & Spence, *supra* note 97, at 8; Jerry L. Mashaw & David Berke, *Presidential Administration in a Regime of Separated Powers: An Analysis of Recent American Experience*, 35 YALE J. ON REGUL. 549, 588 (2018) (describing climate policy as "a major policy area where Congress has essentially ceded all meaningful policymaking to the executive branch").

[99].Freeman & Spence, *supra* note 97, at 20.

[100].Michael A. Livermore & Daniel Richardson, *Administrative Law in an Era of Partisan Volatility*, 69 EMORY L.J. 1, 46 (2019); Jody Freeman, *The Environmental Protection Agency's Role in U.S. Climate Policy—A Fifty Year Appraisal*, 31 DUKE ENV'T L. & POL'Y F. 1, 3 (2020); Adler, *supra* note 1, at 10486-89 (discussing interpretive issues raised by climate regulation under the Clean Air Act).

[101].Adler, *supra* note 1, at 10489-91.

provisions of that statute.[102] The most prominent Obama climate initiatives—the Clean Power Plan, GHG vehicle emission standards, and standards to limit methane emissions from new oil and gas operations—were all the product of agency rulemaking. The same is true of the Trump climate rollbacks. Much of federal climate policy under Biden so far is similarly the product of executive actions—and thus also vulnerable to future rollbacks.

B. Problems with Policy Swings

One could argue that dramatic policy swings driven by changes in presidential administrations promote political accountability and reflect shifts in electoral preferences. However, there are several problems with this argument. As an initial matter, the infrequency of presidential elections and multiplicity of issues make elections no more than a rough mechanism for achieving accountability.[103] Moreover, with two of the last four presidents taking office after losing the popular vote, presidential election results increasingly fail to reflect the electorate's general preferences.[104] Indeed, public preferences on issues are unlikely to see-saw in the dramatic fashion that climate policies have.[105] On the contrary, public support for prioritizing environmental protection has grown steadily over the last decade,[106] and Trump's rollbacks occurred in the face of growing public concern about climate change.[107]

[102].Freeman & Spence, *supra* note 97, at 22-42.

[103].Heidi Kitrosser, *The Accountable Executive*, 93 MINN. L. REV. 1741, 1749-50 (2009).

[104].Bulman-Pozen, *supra* note 93, at 317.

[105].Lydia Saad, *The U.S. Remained Center-Right, Ideologically, in 2019*, GALLUP (Jan. 9, 2020), https://news.gallup.com/poll/275792/remained-center-right-ideologically-2019.aspx [https://perma.cc/6LMZ-UTWX]; Paul DiMaggio, John Evans & Bethany Bryson, *Have Americans' Social Attitudes Become More Polarized?*, 102 AM. J. SOC. 690, 738-39 (1996).

[106].Cary Funk & Brian Kennedy, *How Americans See Climate Change and the Environment In 7 Charts*, PEW RSCH. CTR. (2020), https://www.pewresearch.org/fact-tank/2020/04/21/how-americans-see-climate-change-and-the-environment-in-7-charts/ [https://perma.cc/93X8-X9HZ]; *As Economic Concerns Recede, Environmental Protection Rises on the Public's Policy Agenda*, PEW RSCH. CTR. (2020), https://www.pewresearch.org/politics/wp-content/uploads/sites/4/2020/02/PP_2020.02.13_Political-Priorities_FINAL.pdf [https://perma.cc/REW5-PATA]. Likewise, during the Ronald Reagan and George Bush Sr. presidencies, the executive's policy of environmental deregulation stood in marked contrast to strong public support for environmental regulation. Peter M. Shane, *Political Accountability in a System of Checks and Balances: The Case of Presidential Review of Rulemaking* 48 ARK. L. REV. 161, 197 (1994).

[107].Cary Coglianese, *Pledging, Populism, and the Paris Agreement: The Paradox of a Management-Based Approach to Global Governance*, 34 MD. J. INT'L L. 139 (2019);

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Policy uncertainty can preserve flexibility to respond to new information or developments in some circumstances.[108] For example, agencies can create or adjust regulations to account for scientific and technological developments.[109] However, the sort of uncertainty at issue here—seemingly arbitrary changes driven by political swings—yields no such benefit.[110] As explained below, this uncertainty imposes serious costs on society in terms of wasted resources, weakened innovation, damaged legitimacy, and heightened friction between the federal government and the states and between the U.S. and other nations.

Policy swings undermine administrative agencies' legitimacy, which derives in substantial part from their technical expertise.[111] Congress charges agencies with addressing issues in a specific area and "develop[ing] a base of expertise and methodological sophistication intended to protect against decision making based solely on passion or 'interest.'"[112] Agencies are supposed to act rationally, applying their knowledge and experience to public problems.[113] Contrary to this model, the Trump administration at times blatantly ignored agency experts or excluded them from climate policymaking.[114]

Anthony Leiserowitz, Edward Maibach, Seth Rosenthal, John Kotcher, Jennifer Carman, Xinran Wang, Matthew Goldberg, Karine Lacroix & Jennifer Marlon, *Politics & Global Warming, December 2020*, YALE PROGRAM ON CLIMATE CHANGE COMM'N 7, 9 (2021), https://climatecommunication.yale.edu/publications/politics-global-warming-december-2020/ [https://perma.cc/6BNW-7C4M]; Lydia Saad, *Global Warming Attitudes Frozen Since 2016*, GALLUP (Apr. 5, 2020), https://news.gallup.com/poll/343025/global-warming-attitudes-frozen-2016.aspx [https://perma.cc/CXH5-J42G].

[108].Amy L. Stein, *Reconsidering Regulatory Uncertainty: Making a Case for Energy Storage*, 41 FSU L. REV. 697, 747-48 (2014).

[109].Barry Sullivan & Christine Kexel Chabot, *The Science of Administrative Change*, 52 CONN. L. REV. 1, 42-45 (2020).

[110].Jody Freeman, *The Limits of Executive Power: The Obama-Trump Transition*, 96 NEB. L. REV. 545, 567 (2018) (explaining that the Administrative Procedure Act reflects a commitment to a nonarbitrary government where justifications for policies must pass the rationality test and be based on actual facts).

[111].Livermore & Richardson, *supra* note 100, at 49.

[112].Shane, *supra* note 106, at 205.

[113].Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983); Livermore & Richardson, *supra* note 100, at 49; Jodi L. Short, *The Political Turn in American Administrative Law: Power, Rationality, and Reasons*, 61 DUKE L.J. 1811, 1813 (2012) ("Reason giving is central to U.S administrative law and practice.").

[114].*See, e.g.*, Dino Grandoni, *Trump Administration Sidelined Experts in Writing Car Pollution Rules, EPA Watchdog Finds*, WASH. POST (Apr. 21, 2021), https://www.washingtonpost.com/climate-environment/2021/04/21/trump-Administration-sidelined-experts-writing-car-pollution-rules-epa-watchdog-finds/ [https://perma.cc/5FQV-FQRF]; Marianne Lavelle, *The Resistance: In the President's Relentless War on Climate Science, They Fought Back*, INSIDE CLIMATE NEWS (Dec. 27, 2020), https://insideclimatenews.org/news/27122020/trump-climate-science-epa-wheeler-biden/ [https://perma.cc/HH8B-Y664].

Even when agency experts are consulted, sudden policy reversals may reflect arbitrariness and politicization rather than competence and expertise. To be sure, agencies often couch policy reversals in rational terms to withstand judicial scrutiny. Nonetheless, an agency that has already decided to reverse course because of a presidential order is less likely to engage in reasoned deliberation with stakeholders and the general public.[115]

Policy swings also undermine the effectiveness and efficiency of government programs. Agencies expend time and resources in laborious rulemakings and waste administrative resources when they undo regulations that they just promulgated.[116] The constant back-and-forth is especially troubling with respect to climate policy. For one, climate policy instability in one jurisdiction can undermine other jurisdictions' willingness to proceed with their own climate regulation.[117] For another, inaction or conflicting policy actions can exacerbate climate change. More drastic policies will be necessary not only to compensate for ineffective action in the past but also to counter positive feedback mechanisms triggered by climate change itself.[118] These mechanisms include the release of methane by thawing permafrost and the warming-induced increase of atmospheric water vapor concentrations, both of which cause further warming. Positive feedback loops aside, ineffective action now will necessitate faster cuts in emissions later—just as such cuts may become increasingly expensive and difficult.[119]

Policy swings also impose significant costs on industry and society.[120] Industry may incur substantial costs in scrambling to comply with shifting regulations.[121] To some extent, companies may adopt "no regrets" strategies that meet existing and

[115].Sullivan & Chabot, *supra* note 109, at 78. Even for proponents of the unitary executive, swings resulting from politicized decision-making can be problematic if they disregard facts found by the agency, advance personal or narrow interests, or are based on "raw politics" rather than a public-regarding justification. Short, *supra* note 113, at 1832.

[116].Livermore & Richardson, *supra* note 100, at 48.

[117].William W. Buzbee, *Federalism Hedging, Entrenchment, and the Climate Challenge*, 2017 WIS. L. REV. 1037, 1045.

[118].Dan Lashof, *Why Positive Climate Feedbacks Are So Bad*, WORLD RES. INST. (Aug. 20, 2018), https://www.wri.org/insights/why-positive-climate-feedbacks-are-so-bad [https://perma.cc/RP3Q-P3XK]; *see also* Lazarus, *supra* note 2, at 1855 (worrying that "[s]ome options [for addressing climate change] cease to be available if we fail to address the issue sooner rather than later").

[119].United Nations Env't Programme, *Emissions Gap Report 2019*, at xiii, U.N. Doc. DEW/2263/NA.

[120].Livermore & Richardson, *supra* note 100, at 48 ("This constant back and forth is a recipe for regulatory uncertainty, high compliance costs, and ineffective programs.").

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anticipated regulatory requirements[122] and thus "allow[] for success regardless of any regulatory outcome."[123] Private investment in research and development of cleaner technologies is driven by current laws and by horizon-scanning processes that identify potential risks, opportunities, and regulatory changes.[124] Nonetheless, the regulatory uncertainty created by policy swings pose a serious threat to innovation and investment.[125] This threat is especially significant in policy domains—such as climate change—where policy solutions focus beyond the immediate future or require large or long-term investments in infrastructure and the like.[126] Why devote significant resources to installing pollution-control equipment if the regulation requiring that equipment is likely to change? Or why develop renewable power generation facilities if future regulations may render those facilities unprofitable or obsolete? Uncertainty hampers the regulated community's decision-making, reduces operational efficiency, and increases compliance costs.[127] In the wake of an unstable regulatory environment, industry incumbents that operate fossil fuel plants —as well as new entrants in renewable energy—may hesitate to act or may opt for the least financially risky course of action.[128] Uncertainty may also prompt industry incumbents to resist future regulation, demand waivers from regulation, or seek

[121].Livermore & Richardson, *supra* note 100, at 48 (noting that once the Clean Power Plan was finalized, "States and private actors began to incur compliance costs, but the repeal undermined the climate benefits of those investments. This repeal, however, is just as unstable as the initial policy, such that new compliance costs may emerge again soon.").

[122].Stein, *supra* note 108, 747-48.

[123].*Id.* at 752; *see* Ryan B. Stoa, *From the Clean Power Plan to the Affordable Clean Energy Rule: How Regulated Entities Adapt to Regulatory Change and Uncertainty*, 47 HOFSTRA L. REV. 863, 883 (2019); Jonathan S. Masur & Jonathan Remy Nash, *Promoting Regulatory Prediction*, 97 IND. L.J. 203, 206 (2022) (noting that actors may "hedge their bets, insure against certain contingencies, or simply make decisions without regard to future government actions" in response to regulatory uncertainty).

[124].Stoa, *supra* note 123, at 875; David E. Adelman & Kirsten H. Engel, *Reorienting State Climate Change Policies to Induce Technological Change*, 50 ARIZ. L. REV. 835, 854 (2008) (explaining that the "credible threat of stringent regulation in the future," in addition to "policies currently in place," affect companies' long-term decisions).

[125].Buzbee, *supra* note 83, at 1053 ("Policy stability is essential for businesses to plan and flourish."); Stein, *supra* note 108, at 731-32.

[126].Aaron L. Nielson, *Sticky Regulations*, 85 U. CHI. L. REV. 85, 104-09 (2018).

[127].Masur & Nash, *supra* note 123, at 211; David K. Gattie, *Incorporating Stability and Resilience in Energy Policy for the U.S. Power Sector: Recommendations for the Trump Administration*, 30 ELECTRICITY J. 47, 48 (2017) ("[T]he U.S. power sector has recently experienced regulatory and policy volatility and is in need of the latitude to develop long-term integrated resource and infrastructure planning and investment strategies that can hold up under future political transitions.").

[128].Livermore & Richardson, *supra* note 100, at 48; Masur & Nash, *supra* note 123, at 206.

other forms of transitional relief.[129] All other things being equal, greater uncertainty on climate policy increases cumulative GHG emissions by incentivizing actors to postpone mitigation efforts.[130]

Frequent federal policy swings also erode federal-state relations. Federal environmental policies rely heavily on cooperative federalism schemes under which states can regulate an area of interest pursuant to federal guidelines rather than ceding control to federal agencies.[131] Cooperative federalism's carrot-and-stick approach to inducing state action offers federal funding balanced by the threat of direct federal regulation.[132] However, this approach is likely to be less effective in a polarized political environment in which national policies are frequently reversed. Rather than re-tool their agencies to carry out federal directives, states are increasingly likely to stall, enforce contrary policies, challenge federal policies in court, or engage in other forms of *un*cooperative federalism.[133] Texas officials, for example, not only sued to challenge the Clean Power Plan but also refused to consider how the state would comply with the plan if it had been upheld.[134] Fearing that the state's intransigence would ultimately lead to the imposition of direct federal mandates, several Texas utilities urged the state to craft its own compliance plan that could account for the state's interests and unique circumstances.[135] The potential for federal climate policy to swing in the opposite direction nonetheless emboldened Texas' resistance, and Trump's election ultimately allowed Texas to avoid actions that would

[129].Masur & Nash, *supra* note 123127, at 211-13.

[130].Sabine Fuss, Daniel J.A. Johansson, Jana Szolgayova & Michael Obersteiner, *Impact of Climate Policy Uncertainty on the Adoption of Electricity Generating Technologies*, 37 ENERGY POL'Y 733, 742 (2009) (modeling the transition to carbon-neutral electricity generation in the face of uncertain carbon prices and finding that greater price uncertainty results in greater cumulative emissions); *see* Kris Ivanovski & Nicholas Marinucci, *Policy Uncertainty and Renewable Energy: Exploring the Implications for Global Energy Transitions, Energy Security and Environmental Risk Management*, 82 ENERGY RES. & SOC. SCI., at 1-2, 7-8 (2021) (finding, based on country-level data, that economic policy uncertainty contributes to lower levels of renewable energy consumption).

[131].New York v. United States, 505 U.S. 144, 167 (1992).

[132].Robert L. Fischman, *Cooperative Federalism and Natural Resources Law*, 14 N.Y.U. ENV'T L.J. 179, 189 (2005).

[133].Jessica Bulman-Pozen & Heather K. Gerken, *Uncooperative Federalism*, 118 YALE L.J. 1256 (2009).

[134].Jim Malewitz, *With Clean Power Plan Ruling Texas Dodges Climate Action*, KUT 90.5 (Feb. 10, 2016), https://www.kut.org/texas/2016-02-10/with-clean-power-plan-ruling-texas-dodges-climate-action [https://perma.cc/2G3G-9WY9].

[135].Kiah Collier, *Utilities Hope Texas Plays Ball on Clean Air Plan*, TEXAS TRIBUNE (Aug. 2, 2015), https://www.texastribune.org/2015/08/02/utilities-texas-should-devise-emissions-reduction-/ [https://perma.cc/WVL5-UY87].

have hastened a shift from coal-fired electricity to renewables.[136]

Finally, swings in U.S. climate policy undermine international cooperation on climate change. International efforts to reduce GHG emissions under the Paris Agreement revolve around climate action pledges by each nation, termed "nationally determined contributions" (NDCs).[137] While the agreement requires parties to submit and periodically revise their NDCs, each party determines for itself the content of its NDC, and the NDCs themselves are not enforceable.[138] Although the aggregate emissions reductions under the initial NDCs were obviously inadequate, the agreement contemplated that parties would ratchet up the ambition of their commitments "[a]s parties work toward reasonably achievable NDCs and continue to build trust, . . . secure in the knowledge that other parties are making similar sacrifices."[139] Success of the agreement, in other words, hinges on building mutual trust between nations with respect to their climate commitments. However, the Trump administration's climate rollbacks, particularly its withdrawal from the Paris Agreement, badly eroded that trust.[140] Like previous U.S. reversals on the issue, these moves undermined U.S. leadership on climate and its ability to pressure other nations to take more aggressive actions to reduce emissions.[141]

III. Dampening the Swings

The federal government is a central actor in responding to climate change, and federal policy swings waste resources, slow innovation, and undermine efforts to reduce GHG emissions. To be sure, multiple actors shape climate policy, and "[n]o single governmental actor can destroy the complex web of regulation that catalyzed [progress in making renewable energy competitive], nor can any single governmental actor unsettle

[136].Note that a contrary election result would likely have led to the imposition of a federal plan that utilities would have found more difficult to satisfy.

[137].Framework Convention on Climate Change, *Adoption of the Paris Agreement*, art. 3, U.N. Doc. FCCC/CP/2015/L.9/Rev.1 (Dec. 12, 2015).

[138].Noah M. Sachs, *The Paris Agreement in the 2020s: Breakdown or Breakup?*, 46 ECOLOGY L.Q. 865, 872 (2019).

[139].*Id.* at 873-74.

[140].*Id.* at 888-90.

[141].Lisa Friedman, *Amid Biden Climate Push, a Question Looms: Is America's Word Good?*, N.Y. TIMES (Apr. 19, 2021), https://www.nytimes.com/2021/04/19/climate/biden-climate-change.html [https://perma.cc/H2AT-WPXA] (discussing the resistance of China and other nations to U.S. pressure for climate action in light of policy reversals by Presidents Trump and George W. Bush).

deeply entrenched shifts in energy production and resulting pollution reductions."[142] The progress to date is far from enough, however, and identifying ways to dampen the swings of federal climate policy, especially deregulatory swings that undermine such progress, is essential.

A. Actors & Institutions

Actors and institutions inside and outside the federal government have played key roles in moderating climate policy swings. These actors include states, courts, career agency personnel, Congress, and industry.

1. States

In an era of dramatic federal policy swings, states can serve as a critical stabilizing force because their policies do not necessarily change when a new president takes office.[143] Indeed, states have played a critical role in muting the effect of Trump's climate policy rollbacks. States pressed forward on initiatives to reduce GHG emissions, pledged to honor U.S. commitments under the Paris Agreement, and filed lawsuits to thwart many of the Trump administration's climate-related actions.

a. State Initiatives

Many states have established overarching policies to reduce GHG emissions.[144] While these policies largely predated the Trump administration, states often strengthened them in the face of the Trump rollbacks.[145] Nearly half the states have adopted statewide GHG emissions reduction targets.[146] California, for example, intends to achieve net-zero emissions by 2045 and net-negative emissions after that date.[147] A key

[142].Buzbee, *supra* note 83, at 1088.

[143].Bulman-Pozen, *supra* note 93, at 298.

[144].*See* Arroyo, *supra* note 3, at 438-47 (discussing various state measures).

[145].Daniel A. Farber, *U.S. Climate Policy: Obama, Trump, and Beyond*, 10 REVISTA DE ESTUDOS CONSTITUCIONAIS, HERMENEUTICA E TEORIA DO DIREITO 95, 103-04 (2018).

[146].*State Climate Policy Maps*, C2ES, https://www.c2es.org/content/state-climate-policy/ [https://perma.cc/TP3C-5UYU]; *see also Follow the Leaders: States Set Path to Accelerate U.S. Progress on Climate*, NYU SCH. OF L. STATE ENERGY & ENV'T IMPACT CTR. 4-19 (2021) (summarizing state commitments to reduce GHG emissions).

[147].Cal. Exec. Order No. B-55-18 (Sept. 10, 2019), https://www.ca.gov/archive/gov39/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf [https://perma.cc/LYB8-373F].

component of state climate policies is energy policy, where states' responsibilities include oversight of the power plants that electric utilities build.[148] Thirty states and the District of Columbia have adopted Renewable Portfolio Standards (RPS) mandating that electric utilities obtain at least a specified percentage of electricity from renewable energy sources.[149] Seven additional states have adopted goals mandating a floor for electricity production from renewable energy sources.[150] Several states require 100% renewables by 2050 or earlier.[151] These state policies are responsible for approximately half of the growth in renewable electricity generation and capacity since 2000.[152]

In addition to setting overarching standards, states adopted specific measures to reduce emissions during the Trump presidency. Participation in the Regional Greenhouse Gas Initiative (RGGI), a cap-and-trade program aimed at facilitating emissions reductions by electric utilities, increased to eleven states.[153] California extended its cap-and-trade program, which covers 85% of the state's GHG emissions, through 2030[154] and mandated solar power on new home construction.[155] States directly invested in renewable energy projects and energy storage projects while offering incentives to increase energy efficiency and renewables.[156]

[148].Klass, *supra* note 72, at 250.

[149].Laura Shields, *State Renewable Portfolio Standards and Goals*, NAT'L CONFERENCE OF STATE LEGISLATURES (Aug. 13, 2021), https://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx [https://perma.cc/4DNC-E2VV]; *Renewable Energy Explained*, EIA (June 29, 2021), https://www.eia.gov/energyexplained/renewable-sources/portfolio-standards.php [https://perma.cc/VG78-2YMH].

[150].*Renewable Energy Explained*, *supra* note 149.

[151].*Id. California's* RPS, for instance, sets the following renewable energy targets: 44% by 2024, 52% by 2027, 60% by 2030, and 100% by 2045. CAL. PUB. UTIL. CODE §§ 399.11, 399.15, 399.30, 454.53 (2018).

[152].Galen Barbose, *U.S. Renewables Portfolio Standards: 2021 Status Update: Early Release*, US DEP'T OF ENERGY 5 (2021), https://eta-publications.lbl.gov/sites/default/files/rps_status_update-2021_early_release.pdf [https://perma.cc/YY2C-8C2X].

[153].*RGGI States Welcome Virginia as Its CO_2 Regulation Is Finalized*, RGGI (July 8, 2020), https://www.rggi.org/sites/default/files/Uploads/Press-Releases/2020_07_08_VA_Announcement_Release.pdf [https://perma.cc/N6N9-EVSH].

[154].AB 398, 2017-2018 Reg. Sess. (Cal. 2017); CAL. AIR RES. BD., OVERVIEW OF ARB EMISSIONS TRADING PROGRAM (2015), https://ww2.arb.ca.gov/sites/default/files/classic//cc/capandtrade/guidance/cap_trade_overview.pdf [https://perma.cc/RU9W-WYEA].

[155].CAL. CODE REGS. tit. 24, § 6 (2020); *Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation*, CAL. ENERGY COMM'N (May 9, 2018), https://www.energy.ca.gov/news/2018-05/energy-commission-adopts-standards-requiring-solar-systems-new-homes-first [https://perma.cc/Y7BR-YS9B].

[156].Arroyo, *supra* note 3, at 440 (discussing measures adopted by New York); Farber, *supra* note 145, at 104.

Moreover, California has the authority—unique among states—to regulate pollution from new motor vehicles, and the state took advantage of that authority to protect GHG emission standards set under the Obama administration. Under the Clean Air Act, California may set more stringent vehicle emission standards than the federal government if it obtains a waiver from EPA.[157] Other states may then adopt California's standards, potentially magnifying the impact of California's actions on the national car market.[158] As noted above, California responded to the Trump administration's weakening of GHG emission standards by reaching an agreement with several major automakers to achieve greater emissions reductions than what the weakened federal standards would have required.[159]

State policies on climate also sustained norms regarding the necessity of climate action.[160] These policies signaled to other nations a continued commitment to the Paris Agreement, contrary to federal policy under Trump, and laid the groundwork for subsequently rebuilding climate policy.[161] States representing more than half of the U.S. population and gross domestic product formed the U.S. Climate Alliance, a coalition of states committed to "[i]mplement policies that advance the goals of the Paris Agreement," including keeping temperature increases below 1.5° C.[162] Many of these states also signed on to the "We Are Still In" declaration, which noted that "[i]n the U.S., it is local, tribal, and state governments, along with businesses, that are primarily responsible for the dramatic decrease in greenhouse gas emissions in recent years."[163] Such state efforts maintained a U.S. presence in international climate policy and helped to establish international networks to foster cooperation.[164]

[157].Clean Air Act § 209, 42 U.S.C. § 7543 (2018).

[158].Clean Air Act § 177, 42 U.S.C. § 7507 (2018). Thirteen states representing nearly half of the new car market have adopted California's auto emission standards. Maxine Joselow, *Calif. Might Matter More Than Biden for EV Sales*, CLIMATEWIRE (Dec. 7, 2020), https://www.governorsbiofuelscoalition.org/calif.-might-matter-more-than-Biden-for-ev-sales/ [https://perma.cc/XEU8-EDZK].

[159].*See supra* note 73 and accompanying text.

[160].Sharmila L. Murthy, *States and Cities as "Norm Sustainers": A Role for Subnational Actors in the Paris Agreement*, 37 VA. ENV'T L.J. 1, 2 (2019).

[161].*Id.*; Cinnamon P. Carlarne, *U.S. Climate Change Law: A Decade of Flux and an Uncertain Future*, 69 AM. U. L. REV. 387, 459 (2019).

[162].UNITED STATES CLIMATE ALLIANCE, http://www.usclimatealliance.org/ [https://perma.cc/XTP3-EKH3]; Arroyo, *supra* note 3, at 435-36.

[163].*"We Are Still In" Declaration*, WE ARE STILL IN, https://www.wearestillin.com/we-are-still-declaration [https://perma.cc/UK82-PVX5].

[164].Dan Farber, *Continuity and Transformation in Environmental Regulation*, 10 ARIZ. J. ENV'T L. & POL'Y 1, 22 (2019).

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b. State Lawsuits

States not only pursued their own climate policies but also sued to block many Trump climate actions. States have long sought to influence federal climate policy through litigation. In the early 2000s, several states challenged EPA's denial of a rulemaking petition regarding new motor vehicle emissions, a lawsuit that culminated in the Supreme Court's groundbreaking decision in *Massachusetts v. EPA*.[165] Red states repeatedly sued the federal government to challenge the Obama administration's climate initiatives.[166] And blue states returned the favor under the Trump administration.[167]

State-filed lawsuits invalidated or slowed many of the Trump administration's climate rollbacks. Federal moves that states successfully challenged include: the stay of a rule limiting methane emissions from new oil and gas wells,[168] the refusal to finalize energy conservation standards,[169] the suspension and subsequent rescission of a rule governing methane waste from oil and gas production on federal lands,[170] the suspension and subsequent repeal of a rule governing royalty payments by coal operators on federal lands,[171] and the suspension of a rule disallowing the use of hydrofluorocarbons in aerosols, air conditioners, and refrigerators.[172] States also challenged the

[165].Massachusetts v. EPA, 549 U.S. 497, 528-32 (2007) (holding that EPA has authority to regulate GHGs under Clean Air Act); RICHARD LAZARUS, THE RULE OF FIVE (2020).

[166].Albert C. Lin, *Uncooperative Environmental Federalism: State Suits Against the Federal Government in an Age of Political Polarization*, 88 GEO. WASH. L. REV. 890, 892-93, 913-14 (2020).

[167].*Full Court Press: How State Attorneys General Guarded Against the Trump Administration's Anti-Regulatory Agenda*, NYU SCH. OF L. STATE ENERGY & ENV'T IMPACT CTR. (2021), https://www.law.nyu.edu/sites/default/files/FullCourtPress-StateImpactCenter.pdf [https://perma.cc/VAK4-HHTR]; Lin, *supra* note 166, at 914-15.

[168].Clean Air Council v. Pruitt, 862 F.3d 1 (D.C. Cir 2017).

[169].NRDC v. Perry, 302 F. Supp. 3d 1094, 1096-97 (N.D. Cal. 2018) (suit by states and environmental groups compelling Department of Energy to publish energy conservation standards that had been publicly posted for an error correction in December 2016).

[170].California v. BLM, 286 F. Supp. 3d 1054, 1072-73, 1076 (N.D. Cal. 2018) (invalidating the suspension of the rule); California v. Bernhardt, 472 F. Supp. 3d 573, 632 (N.D. Cal. 2020) (vacating the rescission of the rule). A federal district court in Wyoming vacated the Obama-era rule in separate litigation. Wyoming v. U.S. Dep't of the Interior, 493 F. Supp. 3d 1046, 1087 (D. Wyo. 2020).

[171].Becerra v. U.S. Dept. of Interior, 276 F. Supp. 3d 953, 967 (N.D. Cal. 2017) (holding that the postponement of the rule violated the APA); California *ex rel.* Becerra v. U.S. Dep't of the Interior, 381 F. Supp. 3d 1153 (N.D. Cal. 2019) (vacating the repeal of the rule).

[172].Nat. Res. Def. Council v. Wheeler, 955 F.3d 68, 98-99 (D.C. Cir. 2020).

most prominent Trump climate rollbacks—including the Affordable Clean Energy Rule,[173] EPA's rescission of standards limiting methane emissions from new oil and gas sources,[174] and the SAFE Vehicles Rule.[175] The D.C. Circuit vacated the Affordable Clean Energy Rule,[176] Congress invalidated EPA's rescission of methane standards,[177] and the challenge to the SAFE Vehicles Rule is likely to be mooted by the Biden administration's own vehicle emission standards.[178]

2. Courts and the Stickiness of Administrative Law

Lawsuits by states and other plaintiffs thrust courts into the center of disputes over climate policy rollbacks. While judicial review of agency actions is limited, the courts nonetheless dampened climate policy swings by upholding fundamental principles of administrative law.

Courts generally review agency actions under an arbitrary and capricious standard.[179] "Normally, an agency rule would be arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise."[180] Arbitrary and capricious review promotes deliberation and accountability by requiring agencies to engage

[173].Am. Lung Ass'n v. Env't Prot. Agency, 985 F.3d 914 (D.C. Cir. 2021), *cert. granted*, West Virginia v. Env't Prot. Agency, 124 S. Ct. 420 (Oct. 29, 2021) (No. 20-1530).

[174].Petition for Review, California v. Regan, No. 20-1357 (D.C. Cir. Sept. 14, 2020), http://climatecasechart.com/climate-change-litigation/wp-content/uploads/sites/16/case-documents/2020/20200914_docket-20-1357_petition-for-review-1.pdf [https://perma.cc/QF27-2K6L].

[175].Petition for Review, California v. Wheeler, No. 19-1239 (D.C. Cir. Nov. 15, 2019), https://oag.ca.gov/system/files/attachments/press-docs/5.27.20%20Petition%20for%20Review.pdf [https://perma.cc/5SDS-KS2T]; Complaint, California v. Chao, No. 1:19-cv-02825 (D.D.C. Sept. 20, 2019), https://oag.ca.gov/system/files/attachments/press_releases/California%20v.%20Chao%20complaint%20%2800000002%29.pdf [https://perma.cc/XLW2-MF4J] (challenging the National Highway Traffic Safety Administration rule purporting to preempt California's GHG emission standards).

[176].Am. Lung Ass'n v. EPA, 985 F.3d 914 (D.C. Cir. 2021).

[177].*See supra* note 80 and accompanying text.

[178].*See* Order, Competitive Enterp. Inst. v. Nat'l Hwy. Traffic Safety Admin., No. 20-1145 (D.C. Cir. Apr. 2, 2021) (granting motion to hold consolidated cases in abeyance).

[179].5 U.S.C. § 706(2)(A) (2018); Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 41 (1983).

[180].*State Farm*, 463 U.S. at 43.

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in a public forum and give reasons for their actions.[181] Moreover, arbitrariness review stabilizes government policy by demanding that decisions rest on factual judgments rather than purely political considerations.[182] This stabilizing effect is the flip side of ossification: while procedural requirements slow agency rulemaking, the rules that do emerge from the process are resistant to change.[183]

The climate policy changes instituted by the Trump administration generally required federal agencies to reverse prior positions. Under arbitrary and capricious review of policy reversals, agencies may not simply ignore their prior positions.[184] An agency must "display awareness that it is changing position" and "show that there are good reasons for the new policy."[185] The agency "need not demonstrate . . . that the reasons for the new policy are better than the reasons for the old one."[186] However, it must "provide a more detailed justification than what would suffice for a new policy created on a blank slate" if the "new policy rests upon factual findings that contradict those which underlay its prior policy; or when its prior policy has engendered serious reliance interests that must be taken into account."[187] In other words, past legal documentation, regulatory experience, and explanations for prior regulatory choices—in addition to statutory text—"constrain arbitrary agency change and dampen the frequency and magnitude of policy shifts."[188]

Agency cost-benefit analysis (CBA) can be a key constraint that fosters policy stability.[189] As an initial matter, CBA can hamper policy change because it considers the costs of departing from the status quo but not costs already expended in reaching the status quo.[190] In addition, an agency seeking to roll back a regulation typically must produce a new CBA that

[181].Cass Sunstein, Arbitrariness Review (With Special Reference to the Social Cost of Carbon) 6-7 (June 26, 2021), https://ssrn.com/abstract=3874312 [https://perma.cc/T8LP-6EAJ].

[182].*Id.* at 12.

[183].Nielson, *supra* note 126, at 88-92.

[184].*State Farm*, 463 U.S. at 41, 45; Glicksman & Hammond, *supra* note 4, at 1668.

[185].FCC v. Fox Television Stations, 556 U.S. 502, 515 (2009).

[186].Encino Motorcars, LLC v. Navarro, 579 U.S. 211, 225 (2016) (Ginsburg, J., concurring); *Fox*, 556 U.S. at 515.

[187].*Encino*, 579 U.S. at 222; *Fox*, 556 U.S. at 515.

[188].William W. Buzbee, *The Tethered President: Consistency and Contingency in Administrative Law*, 98 B.U. L. REV. 1357, 1361-62 (2018).

[189].Caroline Cecot, *Deregulatory Cost-Benefit Analysis and Regulatory Stability*, 68 DUKE L.J. 1593, 1631 (2019) ("relying on a high-quality CBA to support its policy is one way an agency can protect against future unwarranted abandonment of the policy").

[190].*Id.* at 1627.

explains departures from the assumptions and methodology of the CBA used to support the original regulation.[191] Judicial review ensures that these departures are not arbitrary and promotes predictable and reasoned policy development.[192]

Rather than engaging with the factors constraining arbitrary agency change, federal agencies under Trump frequently pointed to policymaking discretion and the role of politics to justify policy changes.[193] One commentator noted, for example, that EPA's proposal to repeal the Clean Power Plan "did not cite other relevant statutory language, cases, and past rulemakings . . . ; ignored the EPA's detailed 2014, 2015, and 2017 studies of the electricity sector; ignored state regulatory trends and accomplishments; and nowhere engaged with the EPA's own earlier pro-CPP reasoning."[194] Similarly, the State Department, in issuing a permit for the Keystone XL pipeline in 2017 and reversing a 2015 permit denial, disregarded its prior analysis of climate change-related foreign policy considerations.[195] A federal court invalidated the permit approval, explaining that the State Department's "conclusory statement" on climate change "falls short of a factually based determination, let alone a reasoned explanation, for the course reversal."[196] A further example of arbitrary analysis involved BLM's temporary suspension of provisions of the Waste Prevention Rule applicable to oil and gas operators on federal lands. BLM's regulatory impact analysis assumed that the rule's air quality and climate benefits would be lost only for the duration of the suspension but that the costs of complying with the rule would continue into perpetuity.[197] In nullifying the suspension, a district court explained that BLM's "estimated cost savings is likely seriously inflated due to the flawed and inconsistent assumptions . . . ."[198]

As discussed in more detail below, the courts repeatedly called the Trump administration to task for ignoring fundamental statutory and regulatory requirements.[199] Agencies

[191].*Id.* at 1628.
[192].*Id.* at 1600.
[193].Buzbee, *Tethered*, *supra* note 188 at 1376.
[194].*Id.* at 1387.
[195].Indigenous Env't Network v. U.S. Dep't of State, 347 F. Supp. 3d 561, 583-84 (D. Mont. 2018).
[196].*Id.* at 584.
[197].California v. Bureau of Land Mgmt., 286 F. Supp. 3d 1054, 1069 (N.D. Cal. 2018).
[198].*Id.* at 1070. On multiple occasions, the Trump Administration justified regulatory rollbacks in terms of cost savings while disregarding the benefits of leaving the regulation in place. Noll, *supra* note 4, at 403.
[199].*See infra* Section III.B.2.

fared poorly even before judges appointed by Republican presidents, including Trump, suggesting a deeply held judicial respect for the rule of law and basic principles of administrative law.[200]

3. Agency Resistance

Agency career staff also buffered climate policy notwithstanding efforts to sidestep, sideline, or alter their impact.

The Trump administration systematically sought to stifle scientific activity, weaken the role of expertise, and undermine the use of science in policymaking.[201] It stacked advisory committees with climate-change skeptics and proponents of deregulation, halted research projects studying climate, health, and environmental risks, issued a "secret science" rule to preclude EPA from considering health studies that use confidential data, and issued another rule to hamstring EPA's ability to consider co-benefits of regulation.[202] Prompted by policies hostile to science and the relocation of agency offices, hundreds of scientists left the federal government.[203] The administration's various moves sought to subvert climate regulation as well as EPA's broader regulatory authority.

These efforts did not succeed completely, however. In instituting various climate rollbacks, EPA often articulated facts or data that undermined the bases for the rollbacks and laid the groundwork for potential legal challenges.[204] For example, EPA noted that the proposed Affordable Clean Energy Rule could lead to 1,400 premature deaths and 15,000 cases of upper

[200].Noll, *supra* note 4, at 363-68.

[201].Lin, *supra* note 33.

[202].*Id.* at 255-56, 264-65; Coral Davenport, *New Trump Rule Aims to Limit Tough Clean Air Measures Under Biden*, N.Y. TIMES (Dec. 9, 2020), https://www.nytimes.com/2020/12/09/climate/trump-pollution-regulations.html [https://perma.cc/M6QJ-55ZD].

[203].Brad Plumer & Coral Davenport, *Science Under Attack: How Trump Is Sidelining Researchers and Their Work*, N.Y. TIMES (Dec. 28, 2019), https://www.nytimes.com/2019/12/28/climate/trump-Administration-war-on-science.html [https://perma.cc/K9V3-57JD]; Annie Gowen, Juliet Eilperin, Ben Guarino & Andrew Ba Tran, *Science Ranks Grow Thin in Trump Administration*, WASH. POST (Jan. 23, 2020), https://www.washingtonpost.com/climate-environment/science-ranks-grow-thin-in-trump-Administration/2020/01/23/5d22b522-3172-11ea-a053-dc6d944ba776_story.html [https://perma.cc/FAS4-QXUB].

[204].Coral Davenport, *Trump's Environmental Rollbacks Find Opposition Within: Staff Scientists*, N.Y. TIMES (Mar. 27, 2020), https://www.nytimes.com/2020/03/27/climate/trumps-environmental-rollbacks-staff-scientists.html [https://perma.cc/7BRY-P7C9]; Lavelle, *supra* note 114.

respiratory problems per year.[205] The final version of the rule omitted that data, but it was already part of the rulemaking record.[206] Similarly, despite excluding technical staff from much of the process for rolling back new motor vehicle emission standards, EPA conceded that the move would cost consumers money and increase emissions of GHGs and other pollutants.[207] Indeed, EPA's Science Advisory Board, a key source of peer review and advice to the agency, sharply criticized the Trump fuel economy standards' scientific basis—even though the Board was dominated by Trump appointees.[208]

Agency staff also generated information and reports on climate change that contradicted the climate change denialism of the president and top administration officials.[209] For example, reports from the National Oceanic and Atmospheric Administration highlighted the seriousness of climate change.[210] More prominently, Trump officials failed in their efforts to water down warnings in the Fourth National Climate Assessment of climate change's threats to public safety and economic growth.[211] Attempts to bury the report by releasing it on the day after Thanksgiving likewise failed.[212]

In its zeal to undermine climate regulation and its scientific foundations, the Trump administration undoubtedly did serious damage to research inquiry by federal agencies. Nonetheless,

[205].Lisa Friedman, *Cost of New E.P.A. Coal Rules: Up to 1,400 More Deaths a Year*, N.Y. TIMES (Aug. 21, 2018), https://www.nytimes.com/2018/08/21/climate/epa-coal-pollution-deaths.html [https://perma.cc/3W85-9799].

[206].Davenport, *supra* note 204*'*.

[207].Coral Davenport, *Trump's Path to Weaker Fuel Efficiency Rules May Lead to a Dead End,* N.Y. TIMES (Feb. 13, 2020), https://www.nytimes.com/2020/02/13/climate/trump-fuel-economy-rollback.html [https://perma.cc/MV7M-P4DE]; Arianna Skibell, *Watchdog*: *Trump's Rollback Undercut EPA Staff*, GREENWIRE (Apr. 20, 2021, 1:42 PM), https://www.eenews.net/articles/watchdog-trumps-rollback-undercut-epa-staff/ [https://perma.cc/8RLV-UCNA]; *see also* Lavelle, *supra* note 114 (noting critiques of the Trump rule by engineering and economics experts, including an economist whose work EPA had heavily relied on in its analysis).

[208].Lavelle, *supra* note 114; Sean Reilly, Kelsey Brugger, Maxine Joselow & Ariel Wittenberg, *EPA Science Advisers Slammed the Agency for Ignoring Science. Here is What They Said*, AM. ASS'N FOR THE ADVANCEMENT OF SCI. (Jan. 2, 2020), https://www.sciencemag.org/news/2020/01/epa-science-advisers-slammed-agency-ignoring-science-here-what-they-said [https://perma.cc/V2P5-ERR9].

[209].Christopher Flavelle & Benjamin Bain, *Washington Bureaucrats Are Quietly Working to Undermine Trump's Agenda*, BLOOMBERG (Dec. 18, 2017), https://www.bloomberg.com/news/features/2017-12-18/washington-bureaucrats-are-chipping-away-at-trump-s-agenda [https://perma.cc/JC6Z-7D7C].

[210].*Id*.

[211].Christopher Flavelle, *How Trump Tried, But Largely Failed, To Derail America's Top Climate Report*, N.Y. TIMES (Jan. 1, 2021), https://www.nytimes.com/2021/01/01/climate/trump-national-climate-assessment.html [https://perma.cc/9B9U-RCA2].

[212].*See id.*

agency scientists and committees—not a "deep state" but ordinary public servants doing their jobs—persisted in making information available for the courts, other institutions, and the public to evaluate and use.

4. Congress

One might expect Congress, which our constitutional structure gives a central role in policy making, to dampen policy swings. As already noted, however, Congress has failed to enact legislation specifically regulating GHG emissions.[213] The institution has suffered from gridlock, particularly on environmental matters, leaving a policy vacuum that presidential administration has grown to fill.[214] Legislative action on climate has become especially difficult as Congress's rural bias has grown and as climate change has become more politically divisive.[215] The closest Congress came to directly regulating GHG emissions—a 2009 bill centered on a nationwide cap-and-trade regime—passed the House but was never brought up for a Senate vote.[216] Key factors contributing to the failure of the bill included opposition from politicians representing fossil-fuel reliant states, climate-change denialism among Republicans, and the difficulty of constructing a filibuster-proof supermajority in support of the bill.[217] Even with Democrats now in control of Congress—albeit by the slimmest of margins—climate legislation has proven elusive. The reconciliation bill's core climate policy proposal—a set of financial incentives for utilities to meet clean electricity standards—was abandoned in the wake of opposition by Senator Joe Manchin (D-WV) and other moderates.[218] The prospects for

[213].*See supra* note 98 and accompanying text.

[214].Richard L. Revesz, *Congress and the Executive: Challenging the Anti-Regulatory Narrative*, 2018 MICH. ST. L. REV. 795, 799-804.

[215].Samuel Trachtman, *Building Climate Policy in the States*, 685 ANNALS AM. ACAD. OF POL. & SOC. SCI. 96, 98 (2019).

[216].Jody Freeman, *The Environmental Protection Agency's Role in U.S. Climate Policy—A Fifty Year Appraisal*, 31 DUKE ENV'T L. & POL'Y F. 1, 50-52 (2020).

[217].Mashaw & Berke, *supra* note 98, at 579-80; Revesz, *supra* note 214, at 804.

[218].Nick Sobczyk, *Democrats Return from Glasgow Focused on Climate Package*, CLIMATEWIRE (Nov. 15, 2021, 6:34 AM), https://www.eenews.net/articles/democrats-return-from-glasgow-bullish-about-climate-action/ [https://perma.cc/R298-P927] (noting the removal of the Clean Electricity Performance Program (CEPP) from the bill in response to opposition from Manchin); Nick Sobczyk, *Democrats Search for Plan B as Climate Program Falters*, E&E DAILY (Oct. 19, 2021, 6:45 AM), https://www.eenews.net/articles/democrats-search-for-plan-b-as-climate-program-falters/ [https://perma.cc/NLA8-UQF6] (describing CEPP as "the backbone" of Democrats' climate proposals).

enacting a reconciliation bill, with or without climate provisions, now appear slim.[219]

In the absence of legislation specifically regulating GHG emissions, the executive branch—especially EPA—has been left to exercise its discretion in filling broad statutory gaps. The breadth of these gaps, in turn, has fostered climate policy whiplash as control of the presidency shifts and Congress remains on the sidelines. Congressional resistance to President Trump's climate rollbacks was especially unlikely, as Republicans controlled the Senate throughout his presidency and the House for the first two years.[220]

Nonetheless, even a relatively feeble Congress has contributed modestly to climate-policy stability, primarily through fiscal measures. Whereas comprehensive legislation on climate change has rarely progressed to a floor vote, Congress has enacted tax incentives and other measures that indirectly address climate change.[221] Congress extended tax credits to support renewable energy during Trump's presidency.[222] In December 2020, it enacted legislation that included billions in funding for energy-efficiency efforts and for RD&D on renewables.[223] Congress also consistently rejected stark budget cut proposals from the Trump administration that would have had long-lasting and crippling effects on EPA.[224] Furthermore, congressional action on climate through fiscal policy has continued under the Biden administration: the November 2021

[219].Aaron Blake, *4 Takeaways from Biden's State of the Union Address*, WASH. POST (Mar. 1, 2022), https://www.washingtonpost.com/politics/2022/03/01/4-takeaways-bidens-state-union-address/ [https://perma.cc/K4JN-57S4].

[220].The Senate's rejection of an effort to use the Congressional Review Act to nullify regulation of methane emissions from oil and gas operations on federal lands was a rare exception. *See* Coral Davenport, *In Win for Environmentalists, Senate Keeps an Obama-Era Climate Change Rule*, N.Y. TIMES (May 10, 2017), https://www.nytimes.com/2017/05/10/us/politics/regulations-methane-climate-change.html [https://perma.cc/VJW9-96HS]. The Trump Administration's subsequent rescission of the regulation, as well as the regulation itself, were both invalidated by the courts. *See supra* note 170.

[221].KATE C. SHOUSE, CONG. RSCH. SERV., R46947, U.S. CLIMATE CHANGE POLICY 14 (2021).

[222].MOLLY F. SHERLOCK, CONG. RSCH. SERV., R43453, THE RENEWABLE ELECTRICITY PRODUCTION TAX CREDIT: IN BRIEF 5-6 (2020); MOLLY F. SHERLOCK, CONG. RSCH SERV., IF10479, THE ENERGY CREDIT OR ENERGY INVESTMENT TAX CREDIT (ITC) 2 (2021).

[223].*See* SHOUSE, *supra* note 221, at 14; *see also infra* notes 262-263 and accompanying text. The bill also included a phaseout of hydrofluorocarbons, a class of extremely powerful GHGs used as refrigerants. Jean Chemnick, *How Climate Opponents Helped Pass a Historic Emissions Law*, CLIMATEWIRE (Jan. 7, 2021), https://governorswindenergycoalition.org/how-climate-opponents-helped-pass-a-historic-emissions-law/ [https://perma.cc/7U92-BMXB].

[224].Mashaw & Berke, *supra* note 98, at 585-86; Julie Hirschfeld Davis, *Spending Plan Passed by Congress Is a Rebuke to Trump. Here's Why.*, N.Y. TIMES (Mar. 22, 2018), https://www.nytimes.com/2018/03/22/us/politics/trump-government-spending-bill.html [https://perma.cc/M6L4-ZA2M].

infrastructure bill contained numerous climate-related provisions such as funding for smart grids and grid reliability, public transportation, and battery storage.[225]

The most notable non-fiscal example of Congressional resistance to Trump's climate policy occurred only *after* Democrats took control of Congress in 2021. Using the Congressional Review Act, which allows Congress to quickly repeal regulations finalized within the last sixty legislative days, Congress undid a Trump EPA rollback of Obama-era methane emission standards for new sources in the oil and gas sector.[226] While not insignificant, the move involved only a small piece of federal climate policy and was made possible by the timing of the rule's promulgation—late in the Trump administration and just prior to a change in party control of the presidency and Congress.

5. Industry

Surprisingly, industry sometimes resisted deregulatory moves by the Trump administration—although such resistance had only a limited effect on administration policies.

Undeniably, industry pushed for many of the Trump climate rollbacks. The coal industry, joined by various utilities, attacked the Clean Power Plan and unsuccessfully sought subsidies and a government order that utilities buy coal-generated electricity.[227] Toyota, GM, and several other automakers supported the rollback of new vehicle emission standards.[228] Small oil producers advocated the repeal of limits on methane emissions from new oil and gas operations.[229] And in the final weeks of the Trump administration, the natural gas industry obtained a rule rejecting energy conservation standards for residential furnaces

[225].Timothy Cama, *How the Infrastructure Bill Happened and What It Will Do*, CLIMATEWIRE (Nov. 8, 2021, 6:57 AM), https://www.eenews.net/articles/how-the-infrastructure-bill-happened-and-what-it-will-do/ [https://perma.cc/5TJ2-ZPFN].

[226].S.J. Res. 14, 117th Cong. (2021) (enacted).

[227].Benjamin Storrow, *Trump's Coal Legacy in Ashes after Legal Defeat,* CLIMATEWIRE (Jan. 20, 2021, 7:01 AM), https://www.eenews.net/articles/big-business-is-divided-on-climate-could-that-help-biden/ [https://perma.cc/U6RF-J5HB].

[228].Benjamin Storrow & Jennifer Hijazi, *Big Business Is Divided on Climate. Could That Help Biden?*, CLIMATEWIRE (Nov. 30, 2020, 7:01 AM), https://www.eenews.net/articles/big-business-is-divided-on-climate-could-that-help-biden/ [https://perma.cc/3PLL-CQKX].

[229].Jean Chemnick, *Trump's Climate Dismantling Complete with Methane Rollback*, CLIMATEWIRE (Aug. 14, 2020), https://www.eenews.net/articles/trumps-climate-dismantling-complete-with-methane-rollback/ [https://perma.cc/S78E-2R9L].

and water heaters,[230] while oil refiners, steelmakers, and landfills secured a rule exempting sectors contributing less than 3% of total U.S. GHG emissions from carbon regulation under Section 111(b) of the Clean Air Act.[231]

Industry did not monolithically support carbon deregulation, however. On several occasions, significant industry interests objected to the Trump rollbacks, though often to no avail. Major oil producers opposed EPA's methane emission rollback, which disproportionately benefitted their smaller rivals.[232] Several automakers protested the proposed rollback of fuel economy requirements. When the Trump administration finalized its weaker standards anyway, Honda, Ford, Volkswagen, and BMW reached an agreement with California that preserved much of the substance of the Obama-era standards.[233] The Clean Power Plan received support from the clean energy sector as well as a handful of utilities, who attacked the Affordable Clean Energy Rule promulgated in its place.[234]

Examining why industry opposed some of the rollbacks could illuminate the circumstances in which industry might moderate policy swings. Regulatory certainty is often an important motivation for companies whose decisions today affect their business activities years into the future.[235] For example, automakers who agreed to California's more stringent emission standards cited the desire for certainty and regulatory uniformity.[236] Electric utilities likewise face investment decisions

[230].86 Fed. Reg. 4776 (Jan. 15, 2021); Juliet Eilperin & Dino Grandoni, *In Trump's Last Days, A Spree of Environmental Rollbacks*, WASH. POST (Jan. 15, 2021), https://www.washingtonpost.com/climate-environment/2021/01/15/trump-environmental-rollbacks/ [https://perma.cc/Y6WM-WNSV].

[231].*EPA Finalizes Pollutant-Specific Significant Contribution Finding for Greenhouse Gas Emissions from New, Modified, and Reconstructed Electric Utility Generating Units*, EPA (Jan. 12, 2021), https://www.epa.gov/newsreleases/epa-finalizes-pollutant-specific-significant-contribution-finding-greenhouse-gas [https://perma.cc/BJ9F-5P6V]; Eilperin & Grandoni, *supra* note 230.

[232].Martin Levy, *When Industry Support for Stricter Regulation Is Good Business: Considering the Car Rules and Methane Standards*, HARV. L. SCH.: ENV'T & ENERGY L. PROG. (Apr. 14, 2020), https://eelp.law.harvard.edu/2020/04/when-industry-support-for-stricter-regulation-is-good-business-considering-the-car-rules-and-methane-standards/ [https://perma.cc/97CA-P39Y]. Oil and gas interests also played a significant role in blocking their coal industry rivals' more aggressive efforts to obtain federal support. Storrow, *supra* note 227.

[233].Maxine Joselow, *Automakers Buck Trump, Sign Fuel Economy Deal with Calif.*, GREENWIRE (July 25, 2019), https://www.governorsbiofuelscoalition.org/automakers-buck-trump-sign-fuel-economy-deal-with-calif/ [https://perma.cc/BX7E-7P97].

[234].Storrow & Hijazi, *supra* note 228; *see also* Buzbee, *supra* note 83, at 1089-90, 1096 (noting the "substantial state and industry support" for the Clean Power Plan, climate regulation, and clean energy initiatives).

[235].*See supra* Section II.B.

[236].*See* Caitlin McCoy, *Looking Forward from California's Historic Agreement with Automakers*, HARV. L. SCH. ENV'T & ENERGY L. PROG. (July 26, 2019),

with long-term implications. Disagreement within an industry over the desirability of rollbacks points to a further motivation to oppose rollbacks: obtaining a competitive advantage over industry rivals. As it turned out, automakers who opposed the rollback of federal emission standards had made more significant investments in fuel efficiency and electric vehicles than rollback supporters.[237] Similarly, oil companies that opposed the weakening of methane emissions standards had already invested in technology to reduce methane leaks and were financially better positioned to meet those standards than their smaller competitors.[238] Taking a stand in favor of climate regulation might also offer reputational benefits. Toward the end of the Trump administration, an increasing number of companies voluntarily pledged to achieve net-zero GHG emissions.[239] While these pledges likely did not affect federal policy, they reflect private sector interest in climate action apart from federal policy.

The fact that the Trump administration often proceeded with rollbacks despite substantial industry opposition suggests that the rollbacks were aimed partially at an audience other than industry. In these instances, what mattered was not whether the rollbacks made sense in terms of sound public policy or narrow industry interests. Nor did it matter—at least not very much—whether the rollbacks weathered judicial challenges. Instead, the rollbacks were a form of political theater aimed at garnering support from rural and blue-collar voters alienated by government regulation, economic and social change, and discomforting global trends.

B. Circumstances

In addition to actors and institutions, circumstances also helped to cabin the effects of the Trump rollbacks. These circumstances include the rise of renewable energy and the corresponding decline of coal, Trump administration

https://eelp.law.harvard.edu/2019/07/looking-forward-from-californias-historic-agreement-with-automakers/ [https://perma.cc/E4YU-K2WQ]; Keith B. Belton & John D. Graham, *Trump's Deregulation Record: Is It Working?*, 71 ADMIN. L. REV. 803, 871-72 (2019) (noting that the major trade associations representing the auto industry advocated for "a uniform national regulatory system, even if that means that the federal standards might be stricter").

[237].Levy, *supra* note 232.

[238].*Id.*

[239].*See* Albert C. Lin, *Making Net Zero Matter*, 79 WASH. & LEE L. REV. __ (forthcoming 2022) (on file with author).

inexperience and incompetence, and Trump's one-term presidency.

1. Rise of Renewables and the Decline of Coal

More than any supposed "War on Coal," economic factors have driven the replacement of coal-fired power plants with other power generating sources.[240] Solar photovoltaic and onshore wind facilities can now produce electricity more cheaply than fossil fuel-fired facilities.[241] Indeed, renewable energy growth in Texas and the Midwest has exceeded RPS requirements, reflecting wind energy's economic advantages over other energy sources.[242] Advances in hydraulic fracturing have lowered the price of natural gas, also contributing to the decline of coal and keeping gas-fired power generation cost-competitive with renewables.[243] In contrast, coal-fired power generation is now "slipping out of . . . competitive range."[244] More stringent pollution limits, aside from GHG regulations, have prompted the retirement of many of the oldest and dirtiest coal-fired plants.[245] U.S. coal consumption has dropped by nearly half since its peak in 2007.[246] In addition, the cost of offshore wind has declined significantly in recent years, making this somewhat pricier technology increasingly competitive.[247] As a result of these developments, renewables accounted for more than 20% of electricity generation in 2020, exceeding coal-generated electricity;[248] this is a far cry from even fifteen years

[240].Justin Fox, *Coal's Days May Be Over in the U.S.*, BLOOMBERG OP. (Aug. 17, 2020), https://www.bloomberg.com/opinion/articles/2020-08-17/coal-is-in-spectacular-u-s-decline-despite-trump-orders [https://perma.cc/C7EE-G4YV] (noting that coal-generated energy is more expensive than energy generated by all other major sources and that decline in U.S. coal use "has accelerated since Donald Trump took office").

[241].U.S. ENERGY INFO. ADMIN., ANNUAL ENERGY OUTLOOK 7 (2021) https://www.eia.gov/outlooks/aeo/pdf/electricity_generation.pdf [https://perma.cc/AG83-8GRS]; INT'L ENERGY AGENCY (IEA), PROJECTED COSTS OF GENERATING ELECTRICITY 47 (2020).

[242].Barbose, *supra* note 152, at 17.

[243].Fox, *supra*, note 240; Klass, *supra* note 72, at 252.

[244].IEA, *supra* note 241, at 223.

[245].ENV'T INTEGRITY PROJECT, GREENHOUSE GASES FROM POWER PLANTS 2005-2020 4-5 (Feb. 25, 2021), https://environmentalintegrity.org/wp-content/uploads/2021/02/EIP-Report-on-GHG-from-Power-Plants-3.25.21.pdf [https://perma.cc/54W2-FT7K].

[246].*U.S. Coal Consumption Continues to Decline Across All Sectors*, EIA (June 16, 2020), https://www.eia.gov/todayinenergy/detail.php?id=44115 [https://perma.cc/SX2D-CFYB].

[247].IEA, *supra* note 241, at 13.

[248].Zachary Shahan, *Renewables = 20.6% of US Electricity in 2020*, CLEANTECHNICA (Mar. 7, 2021), https://cleantechnica.com/2021/03/07/renewables-20-6-of-us-electricity-in-2020/ [https://perma.cc/FAA6-RLTA].

ago, when coal's 50% share of U.S. electricity generation dwarfed renewables' 9% share.[249]

Subsidies for research and development, investment, and production have played a critical role in the rise of renewables. A retrospective study of Department of Energy (DOE) investments in wind infrastructure technology R&D from 1976 to 2008 found that these investments stimulated the development of more reliable, safer, and less costly wind turbines and accelerated technical advances and wind-energy generation by six years.[250] The investments generated a 14% rate of return, and their benefit-cost ratio ranged from 2.8:1 to 5.3:1, depending on the discount rate used.[251] A similar study of DOE investments in solar photovoltaic R&D over roughly the same time period estimated that these investments accelerated photovoltaic technology development by 12 years.[252] The investments generated a 17% rate of return, and their benefit-cost ratio ranged from 1.83:1 to 3.24:1, depending on the discount rate used.[253] Overall, R&D subsidies are directly correlated with dramatic increases in the issuance of patents for solar and wind technologies.[254]

Key subsidies for commercialization and deployment of renewable energy include the production tax credit (PTC) and investment tax credit (ITC).[255] The PTC offers a per-kilowatt-hour

[249].*Electric Power Sector CO_2 Emissions Drop as Generation Mix Shifts from Coal to Natural Gas*, EIA (June 9, 2021), https://www.eia.gov/todayinenergy/detail.php?id=48296 [https://perma.cc/WH5K-F73K].

[250].THOMAS M. PELSOCI, U.S. DEP'T OF ENERGY OFFICE OF SCI. & TECH. INFO., RETROSPECTIVE BENEFIT-COST EVALUATION OF U.S. DOE WIND ENERGY R&D PROGRAM, at ES-4, ES-5, 4-1 (2010), https://www.osti.gov/biblio/1339344 [https://perma.cc/YYA5-JDDN]. While these investments fluctuated significantly in the early years of the program, they were fairly stable during the second half of the study period. *Id.* at ES-3 & fig. ES-1.

[251].*Id.* at 8-1.

[252].ALAN C. O'CONNOR, ROSS J. LOOMIS, & FERN M. BRAUN, U.S. DEP'T OF ENERGY, RETROSPECTIVE BENEFIT-COST EVALUATION OF DOE INVESTMENT IN PHOTOVOLTAIC ENERGY SYSTEMS, at ES-4, 1-1 (2010), https://www.energy.gov/sites/prod/files/2014/01/f7/solar_pv.pdf [https://perma.cc/9ZZE-LMB2].

[253].*Id.* at ES-8.

[254].Luis Mundaca & Jessika Luth Richter, *Assessing 'Green Energy Economy' Stimulus Packages: Evidence From the U.S. Programs Targeting Renewable Energy*, 42 RENEWABLE & SUSTAINABLE ENERGY REV. 1174, 1180 (2015).

[255].David M. Hart & Elizabeth Noll, Less Certain Than Death: Using Tax Incentives to Drive Clean Energy Innovation, INFO. TECH. & INNOVATION FOUND. 10 (Dec. 2, 2019), https://itif.org/publications/2019/12/02/less-certain-death-using-tax-incentives-drive-clean-energy-innovation [https://perma.cc/2G8K-87YS]; SHERLOCK (2020), *supra* note 222, at 9; Gilbert E. Metcalf, *Investment in Energy Infrastructure and the Tax Code*, 24 TAX POL'Y & ECON. 1, 27-29 (2010) (reporting that production tax credits strongly influence investment in wind-generated electricity); Leah C. Stokes & Hanna L. Breetz, *Politics in the U.S. Energy Transition: Case Studies of Solar, Wind, Biofuels and Electric Vehicles Policy*, 113 ENERGY POL'Y 76, 79 (2018) (finding that "solar energy deployment has been strongly driven by the [ITC]" and state net energy metering laws); Claudia Hitaj, *Wind Power Development in the United States*, 65 J. ENV'T ECON. MGMT. 394, 407 (2013) (concluding that the federal PTC is the most cost-

tax credit, available to a facility for ten years of generation, for electricity generated from wind, geothermal, and other specified renewable energy resources.[256] The ITC offers an investment tax credit—currently 26%[257]—based on the amount invested to construct solar or other specified types of projects.[258] These policies have been in place for decades—the PTC since 1992 and the ITC since 1978—and have been extended on multiple occasions.[259] The cost of the credits in terms of foregone revenue has risen dramatically in recent years with the increasingly widespread deployment of renewable energy.[260] Both credits are scheduled to be phased down or phased out in the next year or two unless Congress acts.[261]

Though occasionally halting, federal support for renewable energy has continued over extended periods with bipartisan backing. The most recent example is the December 2020 spending bill, which included substantial funding for renewable energy RD&D over the next five years: $1.5 billion for solar energy research, $625 million for wind power, $850 million for geothermal, and $1.08 billion for energy storage.[262] The same legislation also included a two-year extension of the ITC for solar power, a one-year extension of the PTC for onshore wind projects, and a new 30% investment tax credit, available through 2025 for offshore wind projects.[263]

effective driver of wind power development); Ryan Wiser, Mark Bolinger & Galen L. Barbose, *Using the Federal Production Tax Credit to Build a Durable Market for Wind Power in the United States*, 20 ELECTRICITY J. 77, 78 (2007) (finding PTC to be a significant driver of growth in wind energy); TRIEU MAI ET AL., U.S. DEP'T OF ENERGY OFFICE OF SCI. & TECH. INFO., IMPACTS OF FEDERAL TAX CREDIT EXTENSIONS ON RENEWABLE DEPLOYMENT AND POWER SECTOR EMISSIONS 13 (2016), https://www.osti.gov/biblio/1239642 [https://perma.cc/PUM3-5FDN] (finding that federal tax credits contributed to the recent growth in installed renewable capacity).

[256].26 U.S.C. § 45 (2019); SHERLOCK (2020), *supra* note 222, at 1. Wind facilities where construction began before 2017 receive a credit of 2.5 cents per kWh; subsequently constructed facilities receive a smaller credit. SHERLOCK, *supra* note 222, at 1-2.

[257].26 U.S.C. § 48(a)(6)(A)(i) (2018); Jeff St. John, *Congress Passes Spending Bill With Solar, Wind Tax Credit Extensions and Energy R&D Package*, GREENTECH MEDIA (Dec. 22, 2020), https://www.greentechmedia.com/articles/read/solar-and-wind-tax-credit-extensions-energy-rd-package-in-spending-bill-before-congress [https://perma.cc/L454-NJAN]; Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, Div. EE, § 132(b)(1)(A), 134 Stat. 1182, 3052 (2020).

[258].SHERLOCK (2021), *supra* note 222, at 1. Taxpayers who are eligible for both the PTC and the ITC can choose to claim either. SHERLOCK (2020), *supra* note 222, at 2.

[259].SHERLOCK (2020), *supra* note 222, at 3-6; SHERLOCK (2021), *supra* note 222, at 1.

[260].SHERLOCK (2021), *supra* note 222, at 2; SHERLOCK (2020), *supra* note 222, at 7 tbl.3.

[261].St. John, *supra* note 257.

[262].Energy Act of 2020, Pub. L. No. 116-260, §§ 3002(j), 3003(b)(7), 3004(b)(7), 134 Stat. 1182, 2495, 2504, 2511 (Dec. 27, 2020); St. John, *supra* note 257.

[263].E&E News Staff, *13 Ways the Massive Omnibus Hits Energy*, ENERGYWIRE (Dec. 23, 2020, 7:39 AM), https://www.eenews.net/articles/13-ways-the-massive-omnibus-hits-energy/ [https://perma.cc/9JUV-JB9T]; St. John, *supra* note 257; Consolidated

2. Trump Administration Inexperience and Incompetence

Inexperience and incompetence undermined the effectiveness of Trump administration regulatory rollbacks. The administration launched a broad and sweeping attack on climate change regulation, climate science, and the public discourse on climate change.[264] Nonetheless, the administration was extraordinarily unsuccessful in defending legal challenges to agency regulations, winning only 23% of cases (and 24% of environmental and natural resource cases) rather than the usual 70%.[265] Factors contributing to the low win rate include neglect of basic procedural steps, such as notice-and-comment; disregard of obvious statutory and regulatory requirements; failure to make required findings; and poorly crafted and inadequate explanations for agency action.[266]

Professors Robert Glicksman and Emily Hammond propose various explanations for the Trump administration's rampant violations of fundamental administrative law principles.[267] Trump officials may have deliberately prioritized their substantive agenda over procedural and substantive legal requirements or were simply indifferent to such requirements. Officials may have lacked experience in carrying out agency functions. Or perhaps they were following a calculated strategy to push legal boundaries.[268] Glicksman and Hammond were unable to determine the motivations for specific agency actions that courts deemed invalid,[269] and multiple explanations may be at play. Many top agency officials had previously worked as industry lobbyists and had little federal experience.[270] As Oklahoma Attorney General, EPA Administrator Scott Pruitt had spearheaded red-state litigation against Obama's environmental initiatives, and several of his top aides were

Appropriations Act, 2021, Pub. L. No. 116-260, Div. EE, § 204, 134 Stat. 1182, 3057-58.

[264].*See* Sheila D. Collins, *America First: The Trump Effect on Climate Change Policy*, *in* NON-HUMAN NATURE IN WORLD POLITICS 179, 189-91 (Joana Castro Pereira & Andre Saramago eds., 2020); Lin, *supra* note 33.

[265].Noll, *supra* note 4, at 384-85, 390; *see also* Lisa Heinzerling, *Unreasonable Delays: The Legal Problems (So Far) of Trump's Regulatory Binge*, 12 HARV. L. & POL'Y REV. 13, 15 (2018) (describing the Trump Administration's initial agency actions as a "display of autocracy, impulsivity, and jerry-rigged reasoning").

[266].Noll, *supra* note 4, at 396-407; Glicksman & Hammond, *supra* note 4, at 1653-54; Heinzerling, *supra* note 265.

[267].Glicksman & Hammond, *supra* note 4, at 1654-55.

[268].*Id.*

[269].*Id.* at 1713.

[270].Heinzerling, *supra* note 265, at 13.

Oklahoma business associates who had no environmental policy background.[271] Pruitt's disregard of career agency staff as well as political aides increased the legal vulnerability of policies.[272] Pruitt became embroiled in ethics investigations and ultimately resigned.[273] The replacement of Pruitt with former coal lobbyist and Senate staffer Andrew Wheeler reduced but did not end EPA's struggles. For example, EPA's documentation behind its rollback of auto emission standards was sharply criticized for its lack of technical analysis, with "half the document consist[ing] of quotations from automakers laying out their objections to the rule."[274]

[271].Steve Eder & Hiroko Tabuchi, *Scott Pruitt Before the E.P.A.: Fancy Homes, a Shell Company and Friends With Money*, N.Y. TIMES (Apr. 21, 2018), https://www.nytimes.com/2018/04/21/us/politics/scott-pruitt-oklahoma-epa.html [https://perma.cc/2KEG-D4ZW].

[272].Lisa Friedman, Eric Lipton & Coral Davenport, *Scott Pruitt's Rocky Relationship with His Aides Set the Stage for His Fall*, N.Y. TIMES (July 26, 2018), https://www.nytimes.com/2018/07/06/climate/scott-pruitt-epa-aides.html [https://perma.cc/7NSP-C69R].

[273].Rebecca Hersher & Brett Neely, *Scott Pruitt Out at EPA*, N.P.R. (July 5, 2018, 3:48 PM), https://www.npr.org/2018/07/05/594078923/scott-pruitt-out-at-epa [https://perma.cc/7NF8-MZ72].

[274].Coral Davenport & Lisa Friedman, *In His Haste to Roll Back Rules, Scott Pruitt, E.P.A. Chief, Risks His Agenda*, N.Y. TIMES (Apr. 7, 2018), https://www.nytimes.com/2018/04/07/climate/scott-pruitt-epa-rollbacks.html [https://perma.cc/38QX-ZJBF].

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3. One-Term Presidency

Trump's failure to win re-election was another critical factor that limited the impact of his rollbacks. Most of the climate rollbacks were the subject of legal challenges as 2021 began, and his electoral defeat deprived the administration of the opportunity to defend them.[275] The challenged rollbacks include: the Affordable Clean Energy Rule, which might have boosted the use or extended the lifetimes of existing coal-fired power plants for years;[276] the Trump-era vehicle emission standards, which would have generated an additional gigaton of GHG emissions by 2035;[277] and the weakening of EPA and BLM methane standards, which would have led to more than half a gigaton of additional GHG emissions by 2035.[278] The affirmative promotion of fossil fuel production, such as by reducing royalty rates or offering new oil and gas leases on the public lands, would have produced further emissions.[279]

Other Trump-era rules could have affected EPA rulemaking across the board but were put in place too late to have much effect. EPA's secret science rule and its rule governing cost-benefit analysis, both issued in the final weeks of the Trump administration, were promptly scrapped after Biden took office.[280] The one-term Trump presidency and the stickiness of

[275].Maxine Joselow & Adam Aton, *Would Trump's Reelection Lead to Climate Catastrophe?*, CLIMATEWIRE (Nov. 27, 2019, 6:51 AM), https://www.eenews.net/articles/would-trumps-reelection-lead-to-climate-catastrophe/ [https://perma.cc/7R62-KYWP].

[276].Pitt et al., *supra* note 37 (noting potential rebound effect from improved power plant efficiency); Dana Nuccitelli, *The Trump EPA Strategy to Undo the Clean Power Plan*, YALE CLIMATE CONNECTIONS (June 21, 2019), https://yaleclimateconnections.org/2019/06/the-trump-epa-strategy-to-undo-the-clean-power-plan/ [https://perma.cc/34QL-S6SX]; Rob Jordan, *Goodbye, Clean Power Plan: Stanford Researchers Discuss the New Energy Rule*, STAN. NEWS SERV. (June 21, 2019), https://news.stanford.edu/press-releases/2019/06/21/goodbye-clean-power-plan-understanding-new-energy-rule/ [https://perma.cc/QU49-5K9D] (reporting the comments of Deborah Sivas).

[277].Pitt et al., *supra* note 37.

[278].*Id.*

[279].Daniel J. Metzger & Romany M. Webb, *Trump v. the Climate, Round Two*, COLUM. L. SCH.: CLIMATE L. BLOG (Oct. 15, 2020), http://blogs.law.columbia.edu/climatechange/2020/10/15/trump-v-the-climate-round-two-what-four-more-years-of-trump-might-mean-for-climate-regulation/ [https://perma.cc/Y9U5-4UHV].

[280].A district court rejected EPA's contention that the secret science rule was exempt from the Administrative Procedure Act's 30-day notice requirement and remanded the rule. Env't Def. Fund v. EPA, 515 F. Supp. 3d 1135 (D. Mont. 2021); Env't Def. Fund v. EPA, No. 4:21-CV-00003-BMM, 2021 WL 402824 (D. Mont. Feb. 1, 2021). The benefit cost rule was rescinded by EPA through the issuance of an interim final rule. Rescinding the Rule on Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process, 86 Fed. Reg. 26,406 (2021) (to be codified at 40 C.F.R. pt. 83).

administrative law—which requires agencies to undertake often lengthy rulemaking processes and then undergo judicial review—combined to limit the impacts of each rule. However, a future deregulatory administration with two terms to work with could inflict far greater damage on climate policy.

Internationally, parties to the Paris Agreement might have retreated on climate pledges and climate action in the wake of an extended U.S. disengagement on climate.[281] A second Trump term would have occurred during a critical period for implementing the agreement: parties submitted new or updated NDCs in 2020 and 2021, and the first global stocktake, a formal assessment of international progress in addressing climate change, is scheduled for 2023.[282] One analysis predicted a ten-year delay in global emissions reductions as a result of the U.S. withdrawal from the Paris Agreement.[283]

C. Bolstering the Buffers

The central role of federal climate policy—and the likelihood of future deregulatory swings in that policy—necessitate an exploration of ways to dampen the swings and their effects. Some of the factors that cabined the Trump-era changes, such as inexperience, may not constrain future executive actions. Presidential teams familiar with governmental operations might advance their goals more effectively and cement policy reversals in place during a second presidential term. However, other factors could serve as important buffers for climate policy.

As noted above, Congress could play a central role in buffering climate regulation but is unlikely to enact comprehensive climate legislation in the near future. Rather, fiscal tools—in the form of direct subsidies, tax breaks, and agency budgets—have served as Congress's primary mechanism for making climate policy. Such tools not only have proven more politically palatable than direct regulation but also less susceptible to legal challenges.[284] In the absence of a more

[281].Lazarus, *supra* note 2, at 1853; Sachs, *supra* note 138, at 869, 891-92 (suggesting that the reelection of Trump could lead to a breakdown or breakup of the Paris Agreement).

[282].Conference of the Parties Serving as the Meeting of the Parties to the Paris Agreement, *Nationally Determined Contributions Under the Paris Agreement*, ¶¶ 35-49, U.N. Doc. FCCC/PA/CMA/2021/2 (Feb. 26, 2021).

[283].Håkon Sælen, Jon Hovi, Detlef Sprinz & Arild Underdal, *How US Withdrawal Might Influence Cooperation Under the Paris Climate Agreement*, 108 ENV'T SCI. & POL'Y 121, 127 (2020).

[284].Adler, *supra* note 1, at 10495 (observing that taxpayers largely do not have standing to challenge the use of fiscal tools and that their constitutionality is generally not in

active Congress, other key institutions—states, industry, agencies, and courts—must serve as buffers against deregulatory reversals.

1. States

States are an important buffer because they operate apart from the federal government and can establish their own environmental policies. The cooperative federalism approach of the major federal environmental statutes contemplates a significant role for states and generally allows them to set standards that are more stringent than federally established floors.[285] Indeed, states' prominent role in environmental policymaking often enables them to carry on policies that the federal government has changed or abandoned.[286]

The concept of "federalism hedging" recognizes the benefits of overlapping regulatory activity by different levels of government.[287] Though potentially duplicative, regulatory overlap can stabilize policies, promote market confidence, and facilitate private innovation to address social problems.[288] Overlapping federal and state regulations also reduces industry incentives to lobby for policy change and may even prompt industry support for existing policies.[289] In climate regulation, multiple jurisdictions' establishment of renewable portfolio standards, cap-and-trade systems, and direct emissions regulation has produced a "web of regulation" that fosters stable policy and markets, even if one jurisdiction's regulation is rolled back.[290] Furthermore, one jurisdiction's measures may promote GHG-reducing behaviors beyond its borders, as when a state's RPS recognizes renewable energy credits generated out-

doubt).

[285].David E. Adelman & Kirsten H. Engel, *Adaptive Federalism: The Case Against Reallocating Environmental Regulatory Authority*, 92 MINN. L. REV. 1796, 1811-12 (2008); Jesse M. Cross & Shelley Welton, *Making Federalism Work: Lessons from Health Care for the Green New Deal*, 55 U. RICH. L. REV. 765, 814-16 (2021).

[286].Bulman-Pozen, *supra* note 93, at 312 ("[I]f a president wants her regulatory preferences to outlast her Administration, she should embrace cooperation with, even reliance on, states as a vehicle for promoting policy stability"); Buzbee, *supra* note 83, at 1113 ("During a period of federal recoil, states will again likely become the main vessel for climate momentum and in rewarding clean energy innovation.").

[287].Buzbee, *supra* note 83, at 1057.

[288].*Id.* at 1057.

[289].*Id.* at 1056-57.

[290].*Id.* at 1103.

of-state[291] or when a state's policy lays the groundwork for regional collaboration on climate matters.[292]

The Clean Air Act envisions a significant role for the states in accomplishing federally determined goals and offers a powerful mechanism for federalism hedging. Section 111(d) of the Act, which served as the legal foundation for the Clean Power Plan, provides an example. Under Section 111(d), EPA issues emissions guidelines for existing pollution sources, and the states then promulgate plans establishing binding performance standards applicable to those sources.[293] In promulgating the Clean Power Plan, EPA noted the "key role" of the states in reducing emissions at a reasonable cost, acknowledged their experience in this regard, and offered them "flexibility to choose from a range of plan approaches and measures."[294] Even as the Trump EPA repealed and replaced the CPP, state efforts that had been incorporated into the CPP continued, illustrating how federalism hedging can buffer climate policy.[295]

Going forward, federal regulation of GHGs through agency rulemaking should encourage and incorporate state efforts that can continue in the face of subsequent executive branch policy rollbacks. Options include: further regulation of power plants and other significant emission sources under § 111(d), promulgation of new motor vehicle emissions standards while also authorizing concurrent regulation by California, or establishment of a national ambient air quality standard (NAAQS) for GHGs, which would trigger states to write plans to implement such a standard.[296] Granted, states opposed to climate regulation might drag their feet in executing federal regulatory frameworks. In addition, establishing a NAAQS for GHGs might run afoul of unique challenges, as the statutory scheme contemplates that states' pollution control plans will

[291].Trachtman, *supra* note 215, at 101-02.

[292].*See, e.g.*, PACIFIC COAST COLLABORATIVE, REDUCING GREENHOUSE GAS EMISSIONS FROM TRANSPORTATION FUEL WITH LOW CARBON FUEL STANDARDS at 4 (discussing benefits of regional collaboration on low carbon fuel standards), https://46h83069gmc37jdhm425hbh3-wpengine.netdna-ssl.com/wp-content/uploads/2019/03/PCC_LowCarbonFuelStandard_Brief_032719.pdf [https://perma.cc/L5L5-K9ZQ].

[293].42 U.S.C. § 7411(d) (2018).

[294].Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662, 64,664-65 (Oct. 23, 2015).

[295].Bulman-Pozen, *supra* note 93, at 310.

[296].Howard M. Crystal, Kassie Siegel, Maya Golden-Krasner & Clare Lakewood, *Returning to Clean Air Act Fundamentals: A Renewed Call to Regulate Greenhouse Gases Under the National Ambient Air Quality Standards (NAAQS) Program*, 31 GEO. ENV'T L. REV. 233 (2019); Jean Chemnick, *Whiff of the Unthinkable at EPA: CO_2 Standards for States*, CLIMATEWIRE (Mar. 17, 2021, 6:59 AM), https://www.eenews.net/articles/whiff-of-the-unthinkable-at-epa-co2-standards-for-states/ [https://perma.cc/7DYQ-SGJS].

eventually achieve national ambient standards—an impossible task for states to accomplish on their own for globally emitted pollutants like GHGs.[297] Nonetheless, encouraging the establishment of state standards that meet or exceed federal standards can provide a backstop against federal rollbacks.

Congress can support states' climate efforts through fiscal tools. The federal government should fund state and local energy efficiency programs, climate action planning, forest and soil carbon management, and electric-vehicle charging infrastructure.[298] Federal seed grants can help establish programs that can operate without continued federal assistance.

If Congress were to enact legislation directly regulating GHG emissions, avoiding federal preemption would be essential to preserve states' role as policy buffers. Proposed legislation to establish a federal clean energy standard,[299] for example, should affirm states' ability to develop or maintain their own corresponding standards. Because agency regulations also might have a preemptive effect,[300] agencies similarly should confirm states' ability to adopt more stringent approaches when promulgating climate regulations.[301]

States, in turn, should exercise their ability to adopt or strengthen renewable portfolio standards, cap-and-trade programs, energy-efficiency policies, and other measures to reduce GHG emissions. Many of these policies are inherently flexible or can be designed to give private entities a range of compliance options.[302] Measures to promote renewable energy

[297].*See* Jennifer Hijazi, *Biden EPA Ponders "Hail Mary" Move on Greenhouse Gas Air Limits*, BLOOMBERG L., (Mar. 12, 2021), https://news.bloomberglaw.com/environment-and-energy/biden-epa-ponders-hail-mary-move-on-greenhouse-gas-air-limits [https://perma.cc/FW4C-6YFY]. Ratcheting up the stringency of ambient standards for conventional (non-CO_2) pollutants emitted by power plants would avoid this difficulty while indirectly reducing GHG emissions and facilitating state involvement.

[298].Aimee Barnes & Sam Ricketts, *Three Things Biden Can Do to Unleash State and Local Climate Action*, THE HILL (Mar. 18, 2021), https://thehill.com/opinion/energy-environment/543808-three-things-biden-can-do-to-unleash-state-and-local-climate [https://perma.cc/JJL7-UES4]; *Funding Opportunities*, U.S. CLIMATE RESILIENCE TOOLKIT (2021), https://toolkit.climate.gov/content/funding-opportunities [https://perma.cc/3B95-ALUJ].

[299].Benjamin Storrow & Scott Waldman, *Payments or Fines: How Dems' CES Would Affect Utilities*, CLIMATEWIRE (July 15, 2021, 6:46 AM), https://www.eenews.net/articles/payments-or-fines-how-dems-ces-would-affect-utilities/ [https://perma.cc/656T-84KH].

[300].William Funk, *Judicial Deference and Regulatory Preemption by Federal Agencies*, 84 TULANE L. REV. 1233, 1234-35 (2010).

[301].The Clean Air Act explicitly preserves states' regulatory authority. 42 U.S.C. § 7416 (2018).

[302].*See, e.g.*, INT'L ENERGY AGENCY, STATE-LEVEL RENEWABLE PORTFOLIO STANDARDS (RPS) (Dec. 10, 2019), https://www.iea.org/policies/3514-state-level-renewable-portfolio-standards-

are particularly appealing, as reflected by their adoption in red, blue, and purple states.[303] Yet even the adoption of climate policies solely by blue states might shape national political dynamics in favor of federal regulation. Just as automakers sought federal regulation of vehicle emissions in the late 1960s to ward off the specter of state-by-state oversight,[304] California utilities—already subject to climate regulation under state law—supported the Clean Power Plan because it would have offered a more level playing field against out-of-state competitors.[305]

2. Industry and Subsidies

Industry behavior directly affects emission levels and thus is a logical target for buffering efforts. Fiscal tools, which have proven to be politically feasible mechanisms for responding to climate change, can offer powerful incentives for climate action by the private sector amid drastic swings in federal GHG regulation. These tools can not only promote renewable energy technologies but also foster the growth of industries that will support further policies favoring these technologies.[306] Fiscal tools can also facilitate states' adoption of renewable portfolio standards and the like by reducing the costs of renewables.[307]

As recounted above, government subsidies and tax credits drove down wind and solar energy costs, hastening their adoption.[308] These developments, along with the rise of hydraulic fracturing, have been the main drivers behind the decline of coal-fired electricity, more so than executive branch policies. Congress has been generally supportive of renewables through changes in administrations,[309] albeit with less

rps [https://perma.cc/45EL-TCDT] (describing the state RPSs as "flexible-market based policies"); *cf.* Buzbee, *supra* note 83, at 1090-91 (noting that many states and businesses supported the Clean Power Plan because it "would allow states and industry to tailor compliance to their distinctive markets, energy profiles, and regulatory structures").

[303].Cross & Welton, *supra* note 285, at 819, 822-23.

[304].J.R. DeShazo & Jody Freeman, *Timing and Form of Federal Regulation: The Case of Climate Change*, 155 U. PA. L. REV. 1499, 1512 (2007).

[305].Trachtman, *supra* note 215, at 106.

[306].Farber, *supra* note 145, at 27-28.

[307].Trachtman, *supra* note 215, at 109.

[308].*See supra* Section III.B.1.

[309].Jason Scott Johnston, 6 TEX. A&M L. REV. 107, 117 (2018) ("While the Clean Power Plan and many other Obama-era CAA regulations . . . will not be implemented by the Trump Administration, the other side of the Obama-era climate policy, federal financial support of various types of renewable power, has displayed remarkable resiliency.").

consistency than would be ideal for investment and planning purposes.

Going forward, Congress should target subsidies to foster the development and deployment of less mature renewable energy technologies, such as offshore wind.[310] At the same time, it should continue subsidies for onshore wind and other more established technologies, with an eventual phasedown, to hasten their further adoption.[311] Congressional proposals to extend the PTC and ITC would likely generate significant additional solar and wind capacity while substantially reducing GHG emissions.[312] Long-term extensions would incentivize greater investment in renewables by reducing the uncertainty historically associated with these tax credits.[313]

Aside from direct financial support, the Biden administration should push forward on its plan to issue leases and permits for offshore wind development with the goal of achieving 30 gigawatts of offshore wind generation by 2030.[314] Offshore wind promises a relatively steady energy supply with low transmission costs, and its deployment in Europe has refined the technology and made it more economically competitive.[315] Offshore wind technology continues to develop, as the size and generation capacity of turbines expand and as floating turbine technology enables operations in deeper waters where winds

[310].Hart & Noll, *supra* note 255, at 12, 19.

[311].*Id.* at 12, 18-19; Benjamin Storrow, *Congress Poised to Dramatically Alter Clean Energy Subsidies*, CLIMATEWIRE (Nov. 16, 2021, 6:50 AM), https://www.eenews.net/articles/congress-poised-to-dramatically-alter-clean-energy-subsidies/ [https://perma.cc/768D-WF7P] (describing the proposed tax subsidies aimed at promoting the deployment of renewables while creating jobs).

[312].Sandra Sattler et al., *Federal Clean Energy Tax Credits: A Vital Building Block for Advancing Clean Electricity* (2021), https://www.ucsusa.org/node/14072 [https://perma.cc/8DWB-NF9R]. The Biden tax plan proposes a 10-year extension of the PTC and ITC for clean energy generation and energy storage. Timothy Gardner, *Biden Tax Plan Replaces U.S. Fossil Fuel Subsidies with Clean Energy Incentives*, REUTERS (Apr. 7, 2021), https://www.reuters.com/business/energy/biden-tax-plan-replaces-fossil-fuel-subsidies-with-incentives-clean-energy-us-2021-04-07/ [https://perma.cc/226V-9U4A].

[313].Hart & Noll, *supra* note 255, at 6.

[314].Coral Davenport, *Biden Administration Plans Wind Farms Along Nearly the Entire U.S. Coastline*, N.Y. TIMES (Oct. 13, 2021), https://www.nytimes.com/2021/10/13/climate/biden-offshore-wind-farms.html [https://perma.cc/L8ZT-QBHK]; Heather Richards, *Biden Launches Major Push to Expand Offshore Wind*, GREENWIRE (Mar. 29, 2021, 1:58 PM), https://www.eenews.net/articles/biden-launches-major-push-to-expand-offshore-wind/ [https://perma.cc/M8HF-4LRM].

[315].Petra Cahill, *What the U.S. Can Learn from the U.K. about Wind Power*, NBC NEWS (Nov. 4, 2021), https://www.nbcnews.com/news/world/us-can-learn-uk-wind-power-rcna2998 [https://perma.cc/BP9P-G3ET]; Ivan Penn, *Offshore Wind Farms Show What Biden's Climate Plan Is Up Against*, N.Y. TIMES (June 7, 2021), https://www.nytimes.com/2021/06/07/business/energy-environment/offshore-wind-biden-climate-change.html [https://perma.cc/4ML7-7LBL].

tend to be stronger.[316] The risk that offering leases now will prematurely lock in offshore wind technology appears modest compared to the urgency of decarbonizing the grid; moreover, developers who obtain leases retain some design flexibility.[317] As with onshore wind, which now generates approximately 8% of U.S. electricity, federal leases and financial support for offshore wind could help this nascent industry achieve critical economies of scale.[318]

Support for renewable energy technologies can build up clean technology industries and increase their political and economic clout.[319] It can also promote economies of scale and further innovation, thereby lowering costs and facilitating widespread adoption.[320] Just as lock-in of fossil fuel technologies has obstructed and delayed transitions to renewable energy, lock-in of renewable energy technologies and their supporting systems could counter efforts to roll back climate regulation.[321] Support for renewables need not be limited to the electricity generation sector. Federal procurement of electric vehicles, a buildout of charging stations, and incentives for electric vehicle manufacture and purchase can put in place a low-carbon transportation system that will be resistant to rollbacks.[322]

Building up private commitments to low-carbon technologies, even among traditionally carbon-intensive industries, also can solidify climate policies against future policy swings. Shortly after Biden's inauguration, GM announced it

[316].U.S. DEPT. OF ENERGY, OFFSHORE WIND MARKET REPORT: 2021 ED. 48, 54, 60 (2021) https://www.energy.gov/sites/default/files/2021-08/Offshore%20Wind%20Market%20Report%202021%20Edition_Final.pdf [https://perma.cc/PY8G-T5QK]; Sarah McFarlane, *Floating Wind Turbines Buoy Hopes of Expanding Renewable Energy*, WALL ST. J. (Feb. 6, 2021), https://www.wsj.com/articles/floating-wind-turbines-buoy-hopes-of-expanding-renewable-energy-11612623702 [https://perma.cc/8CTK-5ZSF].

[317].Adriaan van der Loos, Simona O. Negro & Marko P. Hekkert, *Low-Carbon Lock-In? Exploring Transformative Innovation Policy and Offshore Wind Energy Pathways in the Netherlands*, 69 ENERGY RSCH. & SOC. SCI., at 1-2, 4 (2020) (suggesting that the typical "lengthy process" of experimenting with new technologies prior to the selection of a dominant design "may prove too long" "[f]or societies in need of rapid diffusion of new technologies to help mitigate climate change" and noting that offshore wind product innovation has continued even as deployment has occurred).

[318].Davenport, *supra* note 314; Penn, *supra* note 315; *see also supra* Section III.B.1.

[319].Farber, *supra* note 164, at 27-28.

[320].*Id.* at 25-26.

[321].Buzbee, *supra* note 83, at 1105 (remarking, with respect to the Clean Power Plan, that "as each state creates regulation that in turn fosters linked private investment, private and public constituencies will arise that are invested in that regulation and linked market").

[322].Scott Waldman, *Biden Presses Automakers for Emissions Deal*, CLIMATEWIRE (Mar. 17, 2021, 6:59 AM) [https://perma.cc/Y7HJ-TE3A] (describing the Biden Administration's proposals and efforts).

would sell only electric vehicles by 2035, in apparent response to political developments and a growing belief that electric cars will soon dominate the market for new automobiles.[323] Similarly, Shell has pledged to achieve net-zero GHG emissions by 2050, inclusive of emissions associated with its products. Net-zero commitments by 35 U.S. utilities appear to reflect growing confidence in hydrogen as a fuel source and other potential technological advances.[324] While such pledges are voluntary, the federal government can encourage them, and public attention and various litigation tools can pressure companies to honor them.[325]

The dynamics behind several major automakers' support for the Obama-era fuel economy standards in the face of the Trump rollback suggest one potential blueprint for securing private commitments to decarbonize. Factors contributing to those automakers' somewhat surprising position include not only a preference for regulatory certainty but also reputational benefits and the competitive advantage that more stringent standards would offer over rivals facing higher compliance costs.[326] Setting ambitious yet realistic regulatory requirements can motivate efforts to meet such requirements as well as support for those requirements once companies have substantially invested in meeting them. Moreover, the establishment of public or private standards for disclosing and evaluating sustainability claims can help secure reputational benefits for companies engaged in genuine efforts to decarbonize.[327]

3. Courts and Agencies

Finally, the agencies engaged in constructing climate policies can take steps to buttress those policies against rollbacks. Agencies already have a strong incentive to build a thorough record so that their actions withstand judicial review. Climate policy swings underscore the importance of solid cost-benefit and scientific analyses in fortifying actions against

[323].*See* Neal E. Boudette & Coral Davenport, *GM Phasing Out Cars and Trucks Using Gas by 2035*, N.Y. TIMES, (Jan. 29, 2021), https://www.nytimes.com/2021/01/28/business/gm-zero-emission-vehicles.html [https://perma.cc/LF6N-DGWS].

[324].*See* John Fialka, *How 35 Utilities Plan to Hit Net Zero*, E&E NEWS (Feb. 24, 2021), https://www.eenews.net/articles/how-35-utilities-plan-to-hit-net-zero/ [https://perma.cc/UV3L-DC9N].

[325].*See* Lin, *supra* note 239.

[326].Levy, *supra* note 232.

[327].*See* Lin, *supra* note 239, at 23-28.

change by subsequent administrations—and in building confidence within the regulated community that climate policies will persist into the future. As explained above, CBA has played an unexpected role in stabilizing agency regulations. While agencies have some discretion in how they carry out CBA, courts will question the disregard of prior analyses and scrutinize flawed or unreasonable assumptions.[328] Rigorous scientific analyses can similarly armor a policy against deregulatory changes. The evidence supporting EPA's 2009 finding that GHG emissions endanger public health and welfare—as well as the mountain of evidence that has accumulated since—likely played a significant role in dissuading the Trump administration from attempting to undo the finding.[329]

Given the importance of agency expertise in the rulemaking process, protecting the integrity of agency science is critical. A week after taking office, President Biden issued a memorandum directing agencies "to make evidence-based decisions guided by the best available science and data" and establishing a task force to review agency scientific integrity policies.[330] Such policies can reassure agency scientists that they can do their work without political interference. However, the policies themselves may not survive changes in administrations. And even if maintained, these policies may be ignored and are not readily enforceable.[331] To provide more durable protection, Congress should enact legislation, such as the proposed Scientific Integrity Act, to codify elements of these policies and set out procedures for reporting, investigating, and addressing scientific integrity concerns.[332]

When called upon to review agency actions, courts should continue to uphold fundamental principles of administrative law. Notwithstanding courts' limited role in reviewing the substance of agency decisions, the application of administrative law principles ensures that agencies offer rational explanations for their decisions, address alternative approaches, respond to

[328].*See, e.g.*, Sunstein, *supra* note 181, at 6 (analyzing various assumptions that might be made in calculating the social cost of carbon).

[329].*See* Lazarus, *supra* note 2, at 1857; Scott Waldman, *Trashing EPA's Endangerment Finding Would Be Tough*, CLIMATEWIRE (July 18, 2017, 8:12 AM), https://www.eenews.net/stories/1060057523 [https://perma.cc/78AB-92JP]

[330].Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking, 86 Fed. Reg. 8845 (Jan. 27, 2021).

[331].Lin, *supra* note 33, at 288-89.

[332].*See, e.g.*, Scientific Integrity Act, H.R. 849, 117th Cong. (as introduced Feb. 4, 2021); *see also* MARCY E. GALLO, CONG. RSCH. SERV., R46614, FEDERAL SCIENTIFIC INTEGRITY POLICIES: A PRIMER 14-17 (2021) (discussing legislative proposals and options for Congress).

comments, and explain departures from past practices.[333] Judicial review also can make sure that agencies account for relevant scientific and economic findings.[334] The fact that an agency decision incorporates or relies on scientific or other technical data does not require complete judicial deference. Courts are generally equipped to review such cases, particularly when they involve claims that an agency failed to follow adequate procedures, consider relevant data, or provide a reasoned explanation.[335] And when courts do find deliberate disregard of fundamental legal requirements, they can discourage agency misconduct by exercising their discretion to impose stronger remedies.[336]

Deferential judicial review of agency interpretations of law under *Chevron*[337] could exacerbate policy swings by allowing agencies broad leeway to change their interpretations.[338] However, although some Supreme Court justices have expressed interest in revisiting *Chevron*,[339] little or no adjustment to current doctrine would be necessary to buffer climate policy from such swings. Existing doctrine already requires agencies that change their positions to account for prior policies, their underlying factual bases, and any reliance interests engendered by those policies.[340] Judicial scrutiny of agency policy changes to ensure these requirements are met serves as an important policy buffer.

Conclusion

Federal climate policy swings are a foreseeable part of our future. These swings generate uncertainty, waste resources, and frustrate international and domestic cooperation on climate.

[333].Sunstein, *supra* note 181, at 11.

[334].*Id.* at 5.

[335].Lin, *supra* note 33, at 273-74.

[336].Glicksman & Hammond, *supra* note 4, at 1688-1711; Heinzerling, *supra* note 265, at 48 (suggesting that a district court's decision to leave in place a delay rule after invalidating it "could only embolden agencies in the Trump Administration to continue to flout administrative law principles in their zeal to deregulate").

[337].Chevron v. Nat. Res. Def. Council, 467 U.S. 837, 842 (1984).

[338].*See* Gutierrez-Brizuela v. Lynch, 834 F.3d 1142, 1152 (10th Cir. 2016) (Gorsuch, J., concurring) (suggesting that *Chevron* potentially allows an agency to "reverse its current view 180 degrees anytime based merely on the shift of political winds").

[339].*Gutierrez-Brizuela*, 834 F.3d at 1149-58 (Gorsuch, J., concurring); Michigan v. EPA, 576 U.S. 743, 762 (2015) (Thomas, J., concurring) (questioning constitutionality of *Chevron*); *see generally* Kristin E. Hickman & Aaron L. Nielson, *Narrowing Chevron's Domain*, 70 DUKE L.J. 931, 934-35 (2021) (discussing various justices' skepticism regarding *Chevron*).

[340].*See supra* text accompanying notes 184-188.

Deregulatory swings are especially damaging to efforts to address climate change. Finding ways to dampen these swings and accelerate GHG emissions reductions is essential. Key players outside the federal executive branch—including states, Congress, the judiciary, and industry—can serve as critical buffers of federal climate policy.