

U.S. Climate Policy: Obama, Trump, and Beyond

A política climática dos EUA: Obama, Trump e o futuro

Daniel A. Farber¹

University of California, USA
dfarber@law.berkeley.edu

Abstract

Since taking office, President Trump has worked hard to undo President Obama's climate initiatives. Trump has announced an intention to withdraw from the Paris Agreement, and his appointees at the Environmental Protection Agency have begun proceedings to undo major climate-related regulations. At each point, Trump's policies have encountered resistance from state and local governments, courts, and major corporations. In particular, governments in many states such as California have increased their commitments to addressing climate change. Even the current Republican majority in both houses of Congress, which has generally been loyal to Trump, has shown some significant flashes of independence. The courts have shown themselves willing to be quite. In short, Trump has already damaged U.S. climate efforts and will continue to do so, but the U.S. will nevertheless continue to make progress in some areas.

Keywords: environment law, climate policies, Paris Agreement.

Resumo

Desde que assumiu o cargo, o Presidente Trump trabalhou arduamente para desfazer as iniciativas climáticas do Presidente Obama. Trump anunciou a intenção de se retirar do Acordo de Paris, e seus nomeados na Agência de Proteção Ambiental iniciaram procedimentos para desfazer importantes regulamentações relacionadas ao clima. Em cada ponto, as políticas de Trump encontraram resistência de governos estaduais e locais, tribunais e grandes empresas. Em particular, os governos de muitos Estados, como a Califórnia, aumentaram seus compromissos para lidar com as mudanças climáticas. Até mesmo a atual maioria republicana em ambas as Casas do Congresso, que geralmente tem sido fiel a Trump, mostrou alguns flashes significativos de independência. Os tribunais mostraram-se dispostos a agir bastante. Em suma, Trump já prejudicou os esforços climáticos dos EUA e continuará a fazê-lo, mas os EUA continuarão, não obstante isso, a progredir em algumas áreas.

Palavras-chave: direito ambiental, políticas climáticas, Acordo de Paris.

¹ Sho Sato Professor of Law at University of California, Berkeley. Boalt Hall, 94720-7200, Berkeley, CA, USA.

Introduction

There are many differences between the views of President Donald Trump and those of his predecessor, Barack Obama. One of the most dramatic differences involves climate change. Obama led many actions to combat climate change.² Trump has expressed tremendous skepticism about the existence of climate change and pledged to increase U.S. production of oil, natural gas, and coal. He is attempting to repeal many of Obama's actions.

For those who view climate change as a serious threat, this change is a cause for dismay and alarm. Although the situation may be bad, however, it may not be as grim as it seems. The United States is not a monolith, and power is divided among different institutions. There has been major resistance to Trump's efforts across the public and private sectors. As we will see, many corporations and state governments had already begun work to reduce emissions before Trump's election. They have continued that work since the election, and they have even intensified it. Moreover, courts may reverse some of Trump's efforts. This article will describe those developments.

The President is the most powerful individual in the United States, with tremendous power to make change. But the U.S. constitutional system diffuses power across the different branches of the federal government and between the federal and state governments. Presidents have more independence in foreign affairs, but presidential actions in the domestic sphere must be able to connect a specific congressional enactment with any new regulation or the repeal of an existing regulation. Meanwhile, Congress and the courts are both autonomous actors. State governments have their own elected officials and enjoy the power to legislate on any subject where they do not conflict with federal law. The private sector also has considerable power to take independent action so long as they do not violate regulatory prohibitions. The diffusion of initiative and authority among so many actors can be frustrating at times, but it also provides safeguards against ill-advised presidential actions.

The article will proceed in several stages. The analysis will begin by considering how President Trump's views on climate change have been implemented in U.S. foreign policy. It is in this arena that he has the most scope for independent action in terms of U.S. domestic law. But even here, states and corporations have attempted to reduce the practical impact of his actions.

The second section then considers how Trump has attempted to roll back domestic regulations issued by the Obama Administration. Although Trump has begun the process of repeal, completing the necessary procedures will take time, and the courts may not approve the results.

In the third section, the analysis turns to the energy and climate change policies implemented by state and local governments. Some states have undertaken broad initiatives to deal with climate change. Others, while sharing Trump's aversion to climate science, have nevertheless taken steps to promote renewable energy. All of these efforts began before Trump and have continued despite him.

The fourth section then examines environmental decisions of the lower courts since Trump's election. The lower courts have continued to uphold climate science and have rejected the Administration's efforts to develop fossil fuels without even considering their effects on climate change. They also have rejected the Administration's efforts to suspend or delay environmental regulations prior to repealing them. Thus, there are no indications that the lower courts are intimidated by Trump.

Finally, the last section offers some general conclusions. At each point, Trump's policies have encountered resistance from state and local governments, courts, and major corporations. The current Republican majority in both houses of Congress, which has generally been loyal to Trump, has shown some significant flashes of independence. In short, Trump has already damaged U.S. climate efforts and will continue to do so, but the U.S. will nevertheless continue to make progress in some areas.

The Paris Agreement

The President has the greatest ability to act independently in foreign affairs. Thus, President Obama was able to join in negotiating the Paris Agreement and sign on behalf of the United States, without the support of Congress, which was controlled by the opposing party at the time. The Paris Agreement pledges all of the world's nations to reduce their emissions of greenhouse gases in order to combat climate change. President Trump has announced a decision to withdraw the United States from this agreement, though he will not be able to complete the withdrawal process until near the end of his current term in the White House. This action has received worldwide attention and strong criticism from other nations (Shear, 2017).

² For an overview of those efforts, see Hoshijima (2017).

There has also been a strong reaction within the United States against Trump's withdrawal from the Paris Agreement. In an open letter before his decision, hundreds of businesses urged Trump to stick with the Paris Agreement (WWF, 2016). The letter stated that "[c]ontinued US participation in the Paris Agreement, in order to provide the long-term direction needed to keep global temperature rise below 2°C" (WWF, 2016). It also maintained that "[i]mplementing the Paris Agreement will enable and encourage businesses and investors to turn the billions of dollars in existing low-carbon investments into the trillions of dollars the world needs to bring clean energy and prosperity to all" (WWF, 2016). Consequently, these businesses said, "[w]e support leaders around the world as they seek to implement the Paris Agreement and leverage this historic opportunity to tackle climate change" (WWF, 2016). The list of companies signing the open letter included DuPont, eBay, Nike, Unilever, Levi Strauss & Co., Starbucks, General Mills, Hewlett Packard and Hilton.

After President Trump announced his intention to withdraw from the Paris Agreement, many companies reacted by announcing their own intentions to cut their own emissions despite Trump's action. This "We're Still In" group condemned Trump's action and said it "undermines a key pillar in the fight against climate change and damages the world's ability to avoid the most dangerous and costly effects of climate change" (We are still in, 2017). The list of signatories includes technology giants such as Apple, Google, Microsoft, and Facebook, along with hundreds of smaller firms.³

Despite Trump's withdrawal from the Paris Agreement, major American companies are still making vigorous efforts to reduce their carbon emissions. With the federal government "missing in action" in the battle against climate change, we need to look for other options. Some major corporations are taking climate change seriously and beginning to address the issues. In 2016, the Climate Disclosure Project (CDP) reported that 638 companies were "proactively planning" for climate risk and "are outpacing their governments in thinking ahead" and 150 global companies included a "shadow price" in their business strategies (CDP, 2015). For instance, ConocoPhillips, a global oil company, "uses an estimated market cost of greenhouse gas emissions in the range of \$6 to \$51 per tonne (in 2014 uninflated terms) depending on the timing and country or region

to evaluate future project opportunities" (Vandenbergh and Gilligan, 2017, p. 33-34).

Similar strategies are used by many companies, including others in the oil industry. Industries take varying approaches. Wells Fargo, a major bank, applies a carbon price to the operations of borrowers in considering credit risks. Microsoft actually charges its business groups a small carbon fee and uses the funds to support internal efficiency initiatives, green power, and carbon offset projects (Vandenbergh and Gilligan, 2017, p. 140). It contends that its operations are now carbon-neutral (Microsoft Corporation, 2015).

Many corporations made carbon commitments prior to the Paris Agreement (Vandenbergh and Gilligan, 2017, p. 177), and over six hundred have joined the Ceres climate declaration (Vandenbergh and Gilligan, 2017, p. 181).⁴ One revealing statement was from the director of global sustainable agriculture at Monsanto, who said, "This is directly related to our business... We need to provide solutions while farmers are facing climate change" (Halper, 2017). Monsanto (now a part of Bayer) is on track to be carbon neutral by 2021 and has long accepted as fact something the Trump administration has not: that absent swift action, human-induced climate change could be catastrophic for business (Halper, 2017).

Federal climate regulation

There is no specific statute in the United States dealing with climate change. Efforts to pass new legislation in Congress establishing an emissions trading system have not proved successful. Instead, under Obama, the government made use of existing authority under other statutes to try to address climate change. Trump is attempting to undo many of those actions. The legal issues are discussed below. We begin an overview of Obama's climate initiatives and then Trump's efforts to roll back those initiatives.

Federal regulation under Obama

To understand Obama's regulatory initiative, some background is necessary. We begin by examining how the EPA acquired jurisdiction over greenhouse gases from a court decision during the Bush Administration. Following that background material, we will turn to the actions of the Obama Administration.

³ For a detailed discussion of the role of initiatives by the private sector in addressing climate change, see Vandenbergh and Gilligan (2017).

⁴ Further information about this declaration of support for climate action can be found on the Ceres website (Ceres, n.d.).

Federal authority to regulate greenhouse gases

The primary vehicle for addressing climate change has been the federal air pollution statute, the Clean Air Act. The Supreme Court confronted the issue of EPA's regulatory authority in *Massachusetts v. EPA* (549 U.S. 497, 2007). Although President George W. Bush had endorsed limitations on carbon emissions in the 2008 campaign, he reversed course soon after taking office. During his two terms as President, the federal government resisted taking action on climate change. The Supreme Court held in an opinion by Justice John Paul Stevens, however, that greenhouse gases are considered "air pollutants" under the Clean Air Act and that the Environmental Protection Agency (EPA) must regulate them if they endanger human health or welfare. By ruling that EPA did have regulatory authority regarding greenhouse gases and that its decision on whether to regulate them could only be based on scientific evidence, the Supreme Court's ruling set EPA on the path toward establishing federal climate policy.

Justice Anthony Kennedy, the decisive fifth vote in this Supreme Court decision, recently retired. It is possible, but unlikely, that his more consistently conservative replacement might vote to overrule *Massachusetts v. EPA*. But there are several reasons for thinking that the Court will not, in the end, overrule the decision. The Court is especially reluctant to overrule past cases interpreting statutes, like *Massachusetts v. EPA*, as opposed to constitutional decisions. Moreover, Chief Justice John Roberts has joined at least one later ruling based on *Massachusetts v. EPA*, and did not join a concurring opinion in that case calling for overruling the earlier case (see *American Electric Power Company v. Connecticut*, 564 U.S. 410, 2011). Without his vote, there would not be a majority for overruling. Moreover, the late Justice Antonin Scalia took the same position as Roberts in the later case, and he remains an icon among conservatives. So far, even the Trump Administration has not argued for overruling the case. Thus, the possibility of an overruling cannot be completely dismissed, but it does not particularly likely.

After the Court ruled in *Massachusetts v. EPA*, directing EPA to base its decision purely on science, there was little doubt about how it would ultimately rule. The scientific evidence on the link between green-

house gases and climate change is compelling, as is the evidence about the risks involved in raising greenhouse gas levels in the future. Nevertheless, EPA faced considerable challenges. First, it had to document the science in sufficient detail to stand up to attacks from industry and conservative state governments in court. Second, once EPA had decided to regulate greenhouse gases, it had to figure out how to do so within the confines of the Clean Air Act.

The endangerment finding

This first step toward regulation was a finding of endangerment. On remand, to no one's surprise, EPA made a formal finding that greenhouse gas emissions endanger human health or welfare. Under the Administrative Procedure Act, a court probes the decision-making record to determine whether the agency gave a reasoned explanation of its judgment based on the evidence in the record. Challengers will attempt to poke holes in the agency's logic or identify evidence that was ignored by the agency.⁵ These challenges came before the D.C. Circuit in *Coalition for Responsible Regulation, Inc. v. EPA* (684 F.3d 102, D.C. Cir. 2012).⁶ The challengers raised several issues about the EPA finding. First, they argued that EPA, in effect, had delegated its judgment to other bodies such as the Intergovernmental Panel on Climate Change (IPCC) and the National Research Council by relying on their scientific assessments. Clearly, the statute requires EPA to form its own judgment rather than blindly adopting the views of some other body. But EPA cited a large volume of evidence, not just the ultimate conclusions of these expert bodies, so this argument was something of a stretch. Indeed, the court rejected the argument as "little more than a semantic trick."⁷ In reality, the court said, EPA had merely made normal use of the existing scientific literature, and carefully evaluated the quality of these sources before relying on them.

Second, the challengers argued that the scientific evidence in the record did not support the finding of endangerment. The court carefully recounted the basis for this finding in the scientific evidence, concluding that there was substantial evidence that climate change endangers health and welfare. The court stressed that the statute "requires a precautionary, forward-looking scientific judgment", so as "to prevent reasonably an-

⁵ The basic rules governing judicial review of agency action are explained in *Pierce Jr. et al.* (2013, p. 115-120, 317-354).

⁶ The Supreme Court granted review on another issue in the case and reversed in part on that issue in *Utility Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014).

⁷ *Utility Air Regulatory Group v. EPA*, 2014, at 120.

anticipated endangerment from maturing into concrete harm”.⁸ It is worth noting that this approach resonates with the Precautionary Principle found in international environmental law, though the court did not say so.

The Supreme Court agreed to review other aspects of the decision of the court of appeals. However, it denied the request to review the endangerment finding. Consequently, that finding remains unchallenged. Although Scott Pruitt, who headed EPA under Trump until he resigned in July of 2018, attempted to shed doubt on the climate science underlying the endangerment finding, he did not attempt to repeal the finding.

Obama-era regulations

Once it had decided to make a finding of endangerment, EPA was then faced with the question of how to go about using the Clean Air Act to regulate greenhouse gases. This was a relatively straightforward issue legally in terms of vehicle emissions. Section 202 required EPA to impose standards for emissions from new motor vehicles once it had found endangerment, and EPA proceeded to do so without any huge difficulty. The car industry was already under pressure because of regulations adopted in California, so EPA was not writing on a blank slate.⁹ This regulation was upheld by the court of appeals, and the Supreme Court declined to consider the issue.

But it was more difficult for EPA to know how to approach emissions from stationary sources like power plants and factories. As the first stage in dealing with these stationary sources, EPA used a provision of the Clean Air Act that requires any new “major emitting facility” to use the “best available control technology [BACT] for each pollutant subject to regulation under this chapter emitted from, or which results from, such facility” (42 U.S.C. § 7475, a; 2010b). EPA decided that greenhouse gas limits applied to any new facility that was considered a major source due to the quantity of pollutants other than greenhouses. The Supreme Court upheld this part of the regulation.

This left with the question of how to define coverage for sources that emit large amounts of greenhouse gases, but not enough of other pollutants to make them major sources. The problem is that the quantity definition used in the statute work well to distinguish major

from minor sources in terms of other pollutants, but would cover many fairly minor sources of greenhouse gases. The statute defines a major source as one that emits 100 or 200 tons of a pollutant, depending on the type of source.¹⁰ These amounts are very substantial in terms of most pollutants, so that only large factories, refineries, or electrical generators are covered. But this is actually a fairly small amount of carbon dioxide, so applying this definition to greenhouse gases would mean that thousands of small facilities were covered. For that reason, EPA decided to define major sources as a narrower category when the only basis for coverage was the emission of large amounts of greenhouse gases. It said that for purposes of the regulation, those sources would be covered only if they emitted thousands of tons, far more than the amount of pollutant that the statute defined as major. By attempting to modify the definition contained within the statute to cover only a narrower category of sources, EPA knew it was taking a major legal risk.

EPA lost the gamble. The Supreme Court reversed that part of the regulation in *Utility Air Regulatory Group [UARG] v. EPA* (134 S.Ct. 2427, 2014).¹¹ In an opinion by Justice Scalia, the Court concluded that the agency should have realized its narrow definition of major facilities was completely untenable because it conflicted with the statutory definition. EPA “lacked authority to ‘tailor’ the Act’s unambiguous numerical thresholds to accommodate its greenhouse-gas-inclusive interpretation of the permitting triggers” (134 S.Ct. 2014, p. 2448). “Instead”, Justice Scalia continued, “the need to rewrite clear provisions of the statute should have alerted EPA that it had taken a wrong ‘interpretative’ turn” (134 S.Ct. 2427, 2014, p. 2448). Given that EPA’s numerical revision was invalid, its applying the statute to sources based solely on their carbon emissions would mean coverage for “millions of small sources—including retail stores, offices, apartment buildings, shopping centers, schools, and churches” (134 S.Ct. 2427, 2014, p. 2446). The Court rejected such an “enormous and transformative expansion in EPA’s regulatory authority without clear congressional authorization” (134 S.Ct. 2427, 2014, p. 2444). Four Justices dissented from this part of the opinion (134 S.Ct. 2427, at 2449, Breyer, J., dissenting). However, as noted above, the Court concluded that EPA was correct that once a source is classified as “major” because of its emission of conven-

⁸ *Utility Air Regulatory Group v. EPA*, 2014, at 121.

⁹ For background on the process behind the issuance of the regulations, see Freeman (2011).

¹⁰ The definition is found in 42 U.S.C. § 7479(1).

¹¹ For discussion of the implications of the Court’s ruling, see Carlson and Herzog (2015).

tional pollutants, it must also use BACT for greenhouse gases. Thus, the upshot was that only sources that would already have been classified as major are required to use best available control technology to limit greenhouse gas emissions.

In a separate opinion, Justices Alito and Thomas argued that *Massachusetts v. EPA* had erred in holding that the Clean Air Act covers greenhouse gases (134 S.Ct. 2427, at 2445, Alito, J., dissenting). But only two Justices joined that position; the other seven Justices remained firmly committed to applying the statute to greenhouse gases as a general matter. Indeed, the dissent only highlighted the fact that two of the four original dissenters in *Massachusetts v. EPA* (Scalia and Roberts) had conceded EPA's jurisdiction over greenhouse gases. Even after Scalia's replacement, Justice Gorsuch replaced Scalia, there was still a six person majority to uphold at least some EPA climate regulations. The appointment of a more conservative Justice to replace Justice Kennedy seemingly leaves a 5-4 majority in favor of classifying greenhouse gases as pollutants and for requiring controls for major new plants.

The UARG decision did not have a dramatic impact on the effectiveness of the PSD rules, because at least eighty-five percent of greenhouse gases come from facilities that are considered "major" because of their emissions of other pollutants like sulfur dioxide. As yet, the Trump Administration has not attempted to repeal PSD coverage for "anyway" plants. Perhaps the reason is the fact that the rule has already been upheld by the courts, which makes it more difficult to make a cogent case for repeal. Or perhaps the reason is an assumption that, in the absence of pressure from EPA, states (which have primary responsibility for permitting) may not find it hard to issue fairly toothless permits.

After issuing this regulation, the Obama EPA issued standards covering new electric power generators under section 111 of the statute (42 U.S.C. § 7411, 2010a). Section 111(b) authorizes EPA to issue limitations for pollutants from new plants, and EPA did so for electric power plants. In order to regulate existing power plants—especially existing coal-fired plants—EPA turned to section 111(d) of the Clean Air Act (42 U.S.C. § 7411, d), a previously obscure provision. Section 111(d) provides that EPA can require states to submit plans to control emissions from existing plants after it has issued a standard for new sources. The state plans are based on the best "system of continuous emission reduction" (BSER) that has been "adequately

demonstrated" in terms of existing plants in that state. A crucial issue involved the scope of the term "system"—does it include only plant specific emission limitations measures, or could a system be defined more broadly to include things like replacing coal with renewables?

The Obama Administration decided to define the "system" of electrical power generation broadly under section 111(d). Its regulation is known as the Clean Power Plan. (Federal Register, 2015) In the best standard of performance, the Obama EPA looked at emission reduction strategies that could be applied to the grid, such as increased use of renewable energy. Defining the system of pollution control to encompass changes in the amount of electricity introduced into the grid is a departure for EPA, which normally defines it as a type of pollution control equipment at the specific emitting facility¹². The Clean Power Plan was fiercely attacked by industry and conservative leaders. It was a prime target of the Trump Administration.

Trump's efforts to roll back regulation

The Trump Administration has been under some pressure from the conservatives to reopen the endangerment finding, but as yet, EPA has not done so, apparently because of concerns about the litigation risks involved. Thus, the endangerment finding remains unchallenged. So far, there seems to have been no discussion of repealing the PSD permitting requirement for new plants.

Repealing a federal regulation is a lengthy process that requires exactly the same steps as creating a new regulation. Under the Clean Air Act (42 USC § 7607, 2010c), in order to issue or repeal a regulation, EPA must make a detailed proposal explaining the grounds for the action and must all reveal all of the evidence it will rely on to justify the regulation. It also conducts a cost-benefit analysis, which must be approved by the White House. The public then has an opportunity to comment on the proposal, in writing and often at public hearings. Finally, the Administration must issue a detailed justification for its final decision, including its reasons for rejecting significant criticisms of its proposal.

The Administration has opened a proceeding to modify the next phase of greenhouse gas vehicle requirements in order to limit costs of industry, but this proceeding is still at an early stage (Eilperin and Dennis, 2018). It has also made public a proposal to repeal the Clean Power Plan (82 Fed. Reg. 48039).

¹² For discussion of this issue, see DeBellis (2015).

In its proposal for repealing the Clean Power Plan, the Trump Administration adopted an industry argument that the plan is invalid because EPA is limited to considering actions that can be implemented solely within the fence line of an individual emitter, such as installing new pollution control equipment. Recall that, in order to reduce carbon dioxide emissions, the Plan would require utilities to scale back electricity generation at coal-fired plants in favor of generators using natural gas or renewable sources (see 80 Fed. Reg. 64662 et seq.). In other words, according to the Trump Administration, section 111(d) authorizes the agency to impose efficiency improvements for coal-fired plants but not to require that the electricity output of a coal-fired plant be reduced in favor of other sources of electricity. This interpretation of the statute is the basis of EPA's justification for proposing to completely repeal the Plan (82 Fed. Reg. 48039-43).

Trump has also attempted to undo a number of other Obama-era climate initiatives besides the vehicle standards and the Clean Power Plan. One of these initiatives involves the social cost of carbon, an estimate of the amount of harm done by emission of one additional ton of carbon. The Obama Administration created such an estimate by using the most widely cited models used by economists.¹³ Those models combine a climate change model to focus on the global impacts of carbon. The Obama Administration then used various discount rates, a crucial factor in calculating the social cost of carbon, to provide a range of estimates. The Trump Administration rescinded this estimate of the social cost of carbon and later did its own calculation (Mooney, 2017). The new calculation considers only the direct harm of climate change in the United States and uses a high discount rate, which results in giving long-term harms from climate change very little weight. Thus, Trump's estimate essentially includes only harm within the United States within the next few decades. Naturally, this estimate is much lower than Obama's.

Another initiative involves the vehicle emissions standards discussed in the previous section. Those standards are scheduled to become increasingly strict for the next several years. The Administration has proposed freezing the standards at their current levels (Davenport and Tabuchi, 2018). Such a regulatory action could cause problems for car manufacturers, because California still has its own standards for vehicle carbon emissions (Davenport and Tabuchi, 2018). Consequently, the manufacturers have opposed freezing the standard and

urged the Administration to negotiate a compromise with California (Reuters, 2018).

One notable positive development is found in a funding law for the Defense Department. Section 335 of the Defense Authorization Act of 2018 (HR 2810) states that it is the sense of Congress that "climate change is a direct threat to the national security of the United States and is impacting stability in areas of the world both where the United States Armed Forces are operating today, and where strategic implications for future conflict exist". It also says that sea level rise "will threaten the operations of more than 128 United States military sites, and it is possible that many of these at-risk bases could be submerged in the coming years". And moreover, section 335 says, "As global temperatures rise, droughts and famines can lead to more failed states, which are breeding grounds of extremist and terrorist organizations". Thus, Congress has clearly identified ways in which foreign impacts in turn impose domestic costs on the U.S., which a cost-benefit analysis should not ignore. This may make it harder for the Trump Administration to justify ignoring global impacts.

Congress also resisted Trump's efforts to slash the budget of the Environmental Protection Agency and fire many of its staff members as well as eliminating funding for most research on climate change and renewable energy. In the 2018 budget bill passed by Congress, "[t]he Environmental Protection Agency was one of the few parts of the government that did not receive a substantial spending bump in the package, but the measure kept funding for the agency essentially flat at \$8.1 billion, rejecting the 30 percent cut sought by Mr. Trump and Scott Pruitt, the administrator" (Davis, 2018). The budget bill also rejected Trump's proposal to eliminate the Advanced Research Projects Agency-Energy and instead gave it around a fifteen percent increase, while maintaining current funding levels for climate change research at the National Oceanic and Atmospheric Administration (NOAA) (Science News, 2018).

Overall, it is too early to know how successful Trump's deregulatory efforts will be. EPA will undoubtedly issue many decisions repealing prior regulations by the Obama Administration. EPA will need to finish the process of issuing the decisions, which will probably take until the end of 2018 if not longer, and then the litigation process will take additional time. It will probably be one to two years later that the courts decide. They may uphold some of the decisions, reject some of them entirely, and send some back to the agency for

¹³ For a detailed discussion of the Obama Administration's estimate, see Farber (2015).

further consideration. But as we will see in the next section, state governments are not waiting to see this process unfold before taking their own actions to address climate change.

State climate initiatives

State governments have plenary legislative powers in the absence of any prohibition by federal law. In some areas, such as regulation of local electrical utilities, they have customarily had the primary responsibility. States have used these powers to pursue their own energy policies. We will begin by seeing what they were already doing before Trump and then how they have responded to his election.

Pre-Trump Efforts

State governments have played a surprisingly active role in regulating carbon emissions.¹⁴ Among the states that are addressing climate change in meaningful ways, California has played a leading role. California's action on climate change dates began in 1988 with legislation mandating an inventory of California greenhouse gas emissions.¹⁵ In 2006, Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act, usually referred to as AB 32,¹⁶ which requires California to reduce emissions to the 1990 level by 2020. The California effort received worldwide attention because the Governor was an international celebrity and because it was such a stark contrast with the Bush Administration's refusal to address climate change. California has now actively entered into discussions with a number of foreign government, including China.

California implemented AB 32 aggressively. The law itself is notably brief and gives the government enormous discretion about how to achieve its goals, though it does rule out a carbon tax. The California Air Resources Board (CARB) first developed nine "early action" measures, some of which focus on reducing emissions of non-CO₂ greenhouse gases. One important early action was a mandate to reduce the carbon intensity of transportation fuels by ten percent by 2020.¹⁷ But the CARB's most important action was

to establish an emissions trading system. The program originally covered about six hundred industrial facilities, with fuel distributors having been added to the program more recently. California's cap-and-trade program sets a declining, statewide cap on greenhouse gas emission. Many allowances have been distributed free to firms, but an increasing percentage will be auctioned. The auctions have already begun to generate significant amounts of revenue for the state. In 2016, California passed SB 32, which set a new 2030 target of emissions forty-percent below 1990 emissions.¹⁸ The ultimate goal of many California policymakers is an eighty percent reduction by 2050.

States have also combined efforts in regional programs (see Engel, 2005). The most important is the Regional Greenhouse Gas Initiative (RGGI), which is currently composed of eleven states. RGGI created a multistate trading system for power plant emissions with the goal of achieving a ten percent reduction by 2019 (see RGGI, 2018). In 2013, the cap was reset to ninety-one million tons of carbon, down from 165 million tons. A quarter of the proceeds are auctioned, with the proceeds going to finance energy efficiency programs or reduce fee hikes caused by the program. Indeed, many of the carbon reductions associated with the program have stemmed from these energy efficiency programs rather than from the cap itself. The allowance prices remain low, indicating that the cap is still generous, but the cap is set to decline by 2.5 percent annually.¹⁹

In another example of independent state action, the Western Governor's Association (2018) recently passed a bipartisan policy statement related to methane, a powerful greenhouse gas. The statement says that methane is "a potent greenhouse gas emitted from a variety of sources, including oil and gas operations, coal mines, landfills, agriculture, and natural sources" (Western Governor's Association, 2018). Thus, the statement continues, "[t]here are environmental and economic benefits of reducing methane emissions and opportunities for the beneficial use of this natural resource". Consequently, the statement calls for federal methane regulation to "(1) ensure that the capture, commoditization, and sale of methane is promoted; (2) give states the flexibility to integrate a variety of technologies and

¹⁴ For an overview, see Engel (2016).

¹⁵ AB 4420 (Sher), Chapter 1506, Statutes of 1988 (California Legislative Information, 2010b).

¹⁶ AB 32 (Nunez), Chapter 488, California Statutes of 2006, codified at Cal. Health & Safety Code §§ 38500 et seq. (California Legislative Information, 2010a).

¹⁷ This provision was upheld against a claim that it discriminated against biofuel producers in other states. See *Rocky Mountain Farmer's Union v. Corey* (730 F.3d 1070, 1107, 2013).

¹⁸ For the SB 32 text, see California Legislative Information (2016).

¹⁹ For discussion of the legal issues raised by state efforts to limit carbon emissions, see Freeman (2017).

tools to achieve methane emission reduction standards; (3) recognize methane emissions reductions that result from existing state regulation of volatile organic compounds; and (4) work with states to ensure the consistent use of a single, clear method of quantifying methane emissions” (Western Governor’s Association, 2018). This statement is especially noteworthy because the Association contains governors of all the Western States, including many conservative Republicans.

In addition to actions at the state level, many cities have adopted climate action plans.²⁰ Although cities do not have the same extensive regulatory powers as state governments, some specific aspects of emission reduction directly relate to municipal activities. Efforts by city governments have taken many forms. Urban planning and land use control is an important municipal function with important implications for climate change. For instance, cities may use their building codes to encourage more energy-efficient buildings and their transit planning to promote public transportation. One area of interest is promotion of transportation-oriented development, where the goal is to promote additional development close to public transportation hubs. Cities can also reduce barriers to the use of renewable energy, such as zoning restrictions that could hinder rooftop solar.

In addition, city governments can reduce their own energy use and can adopt renewable sources of energy, such as generating electricity from methane produced by waste. Municipalities own a significant number of buildings as well as vehicles such as police cars, so potential emissions reductions are not trivial. Finally, a number of cities run their own municipal electrical utilities, which sometimes have adopted ambitious renewable energy and energy efficiency programs. Given the proportion of the population and the economy found in urban areas, these are not necessarily insignificant steps.

The reaction to Trump

In the aftermath of Trump’s election, several state governments have actually increased their efforts to combat climate change. For instance, New Jersey immediately rejoined RGGI when its Republican governor

was replaced with a Democrat in the 2017 election by a Democrat (see Maloney, 2018). In California, as noted earlier, the legislature adopted a new target in SB 32: reducing emissions thirty-percent below 1990 levels by 2030. But the question remained how to reach this goal. In 2017, the California legislature adopted AB 398 by a two-thirds vote, extending the emissions trading system until 2030.²¹

Rather than using cap-and-trade, Washington adopted the “trade” but not the “cap”, in a distinctive hybrid of conventional regulation and emissions trading. The state’s Clean Air Rule went into effect in January 2017.²² The rule requires major emitters of greenhouse gases to limit and reduce carbon pollution and incentivizes investments to reduce fossil fuel use and accelerate use of clean energy. Unlike California, Washington did not set a statewide cap on emissions. Instead, each facility is assigned its own emission reduction pathway, using its average emissions in 2012-2016 as a baseline. Thereafter, emissions must decrease at a rate of 1.7% per year. Every three years, a facility must demonstrate that it met its reduction goals or face penalties. There is also a reserve of emission reduction units (ERUs) to accommodate new facilities.²³ The state allows trading of ERUs and says that trading will also be allowed with out-of-state programs when those are approved.

New York has also strengthened its approach to climate change in 2017.²⁴ In May 2017, Governor Andrew Cuomo announced a plan to cut methane emissions. In June, he announced that New York was joining the U.S. Climate Alliance. He had this to say on that occasion:

New York State is committed to meeting the standards set forth in the Paris Accord regardless of Washington’s irresponsible actions. We will not ignore the science and reality of climate change, which is why I am also signing an Executive Order confirming New York’s leadership role in protecting our citizens, our environment, and our planet.²⁵

In the first half of 2018, there were even more actions strengthening state climate and renewable energy policies. Consider the following, all within a six-month period:

²⁰ For an overview of what cities are doing, see Rosenzweig and Solecki (2018).

²¹ For the AB 398 text, see California Legislative Information (2018).

²² Washington State Department of Ecology (2016). The rule has been challenged in court by several generators and utilities (US News, 2017).

²³ In effect, the sum of the targets for all individual plants still in operation plus the ERUs from the reserve fund is equivalent to a statewide emissions cap, but the state never sets an explicit target for statewide emissions.

²⁴ On the current status of New York’s renewable energy program, see New York State Energy Plan (2017).

²⁵ “Governor Andrew M. Cuomo Signs Executive Order and Commits New York to Uphold the Standards Set Forth in the Paris Accord,” Governor Andrew M. Cuomo (Governor New York, 2017).

- California passed legislation requiring solar power for all new homes (Penn, 2018).
- Colorado adopted California's car standards, including greenhouse gas standards (Elliott, 2018).
- Connecticut adopted new laws requiring utilities to get forty percent of their power from renewable sources by 2030 and mandating that the state cut greenhouse gases forty-five percent below 2001 levels by 2030 and requiring that government-funded coastal projects take into account a projected sea rise of two feet by 2050 (Cummings, 2018).
- Florida changed its rules to allow long-term leasing of rooftop solar installations to consumers (Bloomberg Environment, 2018).
- Hawaii passed new legislation that rewards utilities for increasing the use of distributed resources like rooftop solar (Mulkern, 2018).
- Illinois regulators approved a pathway to twenty-five percent renewables by 2025.
- New Jersey's Governor signed an executive order rejoining the RGGI regional carbon trading system (Maloney, 2018). He also signed new legislation increasing the renewable energy mandate to thirty-five per by 2025 and fifty percent by 2030, with special provisions for solar and offshore wind (Roberts, 2018). The law also provides a subsidy for nuclear plants.
- New York committed \$1.4 billion to twenty-two renewable energy projects (Geuss, 2018).
- Virginia's governor vetoed a bill that would have prevented him from using an executive order to rejoin an interstate emissions trading system or create a state emissions trading system (Governor Virginia, 2018).

Thus, rather than dampening state efforts to reduce carbon emissions, Trump may actually have given them additional momentum. It is notable that these states not only continued their existing climate policies after Trump but have also strengthened them. Thus, climate policy may be under attack at the federal level, but it is continuing to thrive in some important states.

Moreover, renewable energy has also continued to expand even in conservative states that do not have any policies addressing climate change. For instance, the Electric Reliability Council of Texas (ERCOT),

which operates most of that state's grid, recently projected that in the next fifteen years, Texas will add almost 20 gigawatts (GW) of solar, equivalent to 15-20 new nuclear reactors (ERCOT, 2016). In fact, under virtually every scenario ERCOT considered, the only new capacity is solar, with no new fossil fuel plants expected. ERCOT also expects to retire about a third of that amount in coal generation together with some older, inefficient natural gas plants. As the Texas example illustrates, cheap natural gas and renewables are pushing coal power plants out of operation across the United States, reducing greenhouse gas emissions.²⁶

The courts

The federal courts have not surrendered to the Trump Administration's view of climate policy. They have continued to apply the law objectively and to require agencies to base their decisions on sound science. Only a few cases have reached the courts so far, but they provide some reason for hope that the courts will resist Trump Administration actions that lack legal justification.

In two recent cases, the courts have considered the role of climate change in government decisions. For instance, the U.S. Court of Appeals for the Tenth Circuit held that the government was required to consider climate change impacts when issuing coal leases.²⁷ This ruling will make it harder for the Administration in other issues involving fossil fuels. The agency argued that the coal leases would not affect global emissions because they would simply substitute for coal mined elsewhere. The plaintiffs argue, on the basis of simple economics, that increasing the supply of coal would increase demand, resulting in more total mining. In rejecting the agency's analysis, the court that it was an abuse of discretion to rely on an economic assumption that contradicted basic economic principles. The court also went out of its way to rebut the agency's claim that climate change is an issue "on the frontiers of science," entitling the agency to special deference.

In a second case involving climate effects, the Ninth Circuit upheld a decision by the Obama Administration to classify the Arctic ringed seal as endangered due to climate change, despite the Trump Administration's skepticism about climate science.²⁸ The court said that the finding "that the Arctic ringed seal was likely to become endangered within the foreseeable future—

²⁶ For a survey of renewable energy policies across the United States, see Farber (2018).

²⁷ *WildEarth Guardians v. United States Bureau of Land Management* (870 F.3d 1222, 10th Cir., 2017c).

²⁸ *Alaska Oil and Gas Association v. Ross* (F.3d, 2018 WL 821866, 9th Cir., 2018a).

was reasonable and supported by the record” (United States, 2018a). Noting that IPCC climate models showed the seals’ habitat to be shrinking as sea ice recedes, the court strongly endorsed those models as “the best available science” and said they “reasonably suppor[t] the determination that a species reliant on sea ice likely would become endangered in the foreseeable future” (United States, 2018a).

In several other cases, the courts have strongly resisted efforts by the Trump Administration to delay or suspend regulations from the Obama era. For instance, the D.C. Circuit reversed the Trump Administration’s suspension of an EPA rule limiting methane emissions from oil and gas operations. This ruling is noteworthy because it limits the ability of the Administration to get rid of existing rules without going through a formal rule-making process. The court rejected EPA’s arguments that it had inherent authority to suspend rules and that its attempt to base the suspension on a specific provision of the statute was flatly contradicted by the record (*Clean Air Council v. Pruitt*, 862 F.3d 1, D.C. Cir., 2017a).

Although they did not involve climate change, two other recent cases illustrate the courts’ willingness to reverse administrative delaying tactics. In one of these cases, the Ninth Circuit demanded that EPA move promptly to resolve a rule making regulating lead paint. Since delay is one of the most insidious forms of deregulation, this decision is significant as an indication that judges are unwilling to tolerate indefinite foot-dragging. The court put heavy pressure on the agency to move forward, directing it to issue a proposed rule within ninety days and a final rule within six months” (*In re Community Voice*, 878 F.3d 779, 9th Cir. 2017b).

In another, even more recent case, the Second Circuit reprimanded the Trump Administration for another effort to delay regulations.²⁹ In this case, the regulation was a major increase in the amount of the civil penalty paid by car companies for violating rules governing fuel efficiency. The court held that the effort to delay the penalty increase pending reconsideration had no statutory basis and was also invalid because the government had failed to give notice of the proposal to delay the increase and an opportunity for the public to comment. Although these rulings on regulatory delay did not deal with climate change, it does show the willingness of courts to intervene against Trump’s actions.

There is little indication that the courts will be deferential to the Trump Administration’s actions. Undoubtedly the Administration will win some cases in

court. But even with a potentially more conservative Supreme Court (given the replacement of Justice Kennedy), the courts may be significant barriers to other efforts by the Administration.

Conclusions and lessons learned

Trump’s election may put in danger much of the progress made under Obama in addressing environmental issues and even risk some earlier accomplishments. This was not the very first time that a president favoring climate action was replaced with one opposing regulation: the same thing happened when George W. Bush succeeded Bill Clinton. The Bush years provided a blueprint that still largely applies. Environmentalists were able to use a three-part strategy to deal with the anti-environmental pressures in D.C., and those tools remain available.

The first approach under Bush was to use whatever political leverage was available at the national level to block anti-environmental moves. This included using the Senate where possible to block legislative initiatives, and lobbying heavily on individual issues. This has remained a definite possibility, considering the Republican’s narrow margin in the Senate and the ability of a minority to use the Senate’s procedural rules to delay action. Moreover, if the Democrats succeed in taking the House of Representatives in the 2018 congressional elections, they will have the ability to block anti-environmental regulation.

The second approach under Bush was to use the courts. The replacement of Justice Kennedy by a more conservative judge increases the likelihood that the Court will uphold some of Trump’s efforts to repeal climate change regulations. But the Supreme Court hears relatively few cases a year. The lower courts have a large number of Obama appointees and should be more sympathetic overall. National environmental organizations will play a critical role in litigating these cases, as will sympathetic state governments.

The final approach under Bush was to press forward as much as possible at the state level. California passed AB 32; the Northeastern states moved forward with RGGI; and many other states worked hard on issues like renewable energy. Because Republican control of state governments had increased in the meantime, this strategy under Trump has focused primarily on the regions where Democrats remains strong, such as the West Coast and the Northeast. The elections in No-

²⁹ *Natural Resources Defense Council v. National Highway Safety Administration* (F.3d, 2d Cir., 2018b).

vember 2018 may give the Democrats an opportunity to expand their power among the states, along with new climate initiatives.

In short, while the Trump Administration poses a serious threat to global efforts to address climate change, Trump does not speak for the entire United States. Many influential institutions, including state governments, continue to take climate change serious and work to address the issue.

Trump's election was a surprise. What should not be a surprise is the inevitability of political setbacks for climate policy. We saw that in the U.S. with the shift from Clinton to Bush and then from Obama to Trump. We also saw something similar in Australia and Ontario, where it meant the repeal of a promising emissions trading system. Even if climate denial is banished from the scene, we can expect to see fluctuations in enthusiasm for climate policy. How can we design climate policies to be sturdy in the face of shifting political currents?

As the U.S. has seen under both Bush and Trump, one basis for robustness is to diversify the political bodies involved in climate policy, making it less likely that they will reverse themselves simultaneously. In the U.S., this has primarily meant state climate and energy policy. The Center for Law, Energy, and Environment has issued a fifty-state survey that reveals just how much has been done in this space, even in deeply Republican states (Farber, 2018). As we saw in the fourth, these trends have continued under Trump.

Even within a single level of government, to the extent that climate-related measures become part of different regulatory schemes with different administrators, the logistics of rolling back those policies become more difficult. In addition, dispersed policies may create non-environmental constituencies. For instance, if renewable policies become embedded in utility regulation, they can create constituencies such as renewable generators even in places otherwise inhospitable to environmental regulations. The Obama Administration was active in seeking opportunities for climate policy across the federal administrative states.

There are also forces operating in the private sector to address climate change. As we saw in the second section, there has been a real move by some corporations to reduce their carbon emissions and often emissions by their suppliers. Another way of making climate policy robust is to shift the economics in favor of emission reductions. One effective technique is to help sustainable technologies reach scale through subsidies or marketing guarantees such as renewable portfolio standards. Supporting energy innovation is

another way to drive the energy system toward greater sustainability. Research and development of new technologies may bring down costs, allowing market-driven emissions reductions even when the political atmosphere becomes chilly. They may also encourage more climate friendly policies in other jurisdictions or in the future of that particular jurisdiction by reducing the price of those policies.

The Trump Administration is a dramatic illustration of the potential for backsliding and policy reversals in the long-term campaign against climate change. Going forward, it will be important to design policies and institutions that are as robust as possible in order to survive potential attacks by populist or conservative leaders. In the meantime, many in the United States will be working hard to resist Trump's initiatives and maintain forward progress where possible.

References

- BLOOMBERG ENVIRONMENT. 2018. Sunshine State to Get More Rooftop Solar as Florida Eases Rule. Available at: <https://news.bloombergenvironment.com/environment-and-energy/sunshine-state-to-get-more-rooftop-solar-as-florida-eases-rule/>. Accessed on June 1, 2018.
- CALIFORNIA LEGISLATIVE INFORMATION. 2010a. Assembly bill. Bill n. 32 (Nunez), Chapter 488, California Statutes of 2006. Available at: http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.html. Accessed on June 1, 2018.
- CALIFORNIA LEGISLATIVE INFORMATION. 2010b. Assembly bill. Bill n. 4420 (Sher), Chapter 1506, Statutes of 1988. Available at: http://www.leginfo.ca.gov/pub/09-10/bill/asm/ab_2301-2350/ab_2329_cfa_20100625_200208_sen_comm.html. Accessed on June 1, 2018.
- CALIFORNIA LEGISLATIVE INFORMATION. 2016. SB-32 California Global Warming Solutions Act of 2006: emissions limit. (2015-2016). Available at: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32. Accessed on August 9, 2018.
- CALIFORNIA LEGISLATIVE INFORMATION. 2018. AB-398 California Global Warming Solutions Act of 2006: market-based compliance mechanisms: fire prevention fees: sales and use tax manufacturing exemption. (2017-2018). Available at: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB398. Accessed on August 9, 2018.
- CARLSON, A.E.; HERZOG, M.M. 2015. Text in Context: The Fate of Emergent Climate Regulation after UARG and EME Homer. *Harvard Environmental Law Review*, 39:23-35. Available at: <http://harvardelr.com/wp-content/uploads/2015/04/Carlson-Herzog.pdf>. Accessed on June 1, 2018.
- CDP. 2015. Putting a Price on Risk: Carbon Pricing in the Corporate World. Available at: <https://bit.ly/2bTFafS>. Accessed on June 1, 2018.
- CUMMINGS, B. 2018. Malloy Signs Clean Energy and Climate Bills. Available at: <https://www.ctpost.com/news/article/Malloy-signs-clean-energy-and-climate-bills-13010842>. Accessed on June 1, 2018.
- DAVENPORT, C.; TABUCHI, H. 2018. E.P.A. prepares to roll back rules requiring cars to be cleaner and more efficient. Available at: <https://www.nytimes.com/2018/03/29/climate/epa-cape-auto-pollution-rollback.html>. Accessed on June 1, 2018.
- DAVIS, J.H. 2018. Spending Plan Passed by Congress Is a Rebuke to Trump. Here's Why. Available at: <https://www.nytimes.com>.

- com/2018/03/22/us/politics/trump-government-spending-bill.html. Accessed on June 1, 2018.
- DEBELLIS, E.A. 2015. In Defense of the Clean Power Plan: Why Greenhouse Gas Regulation Under Clean Air Act Section 111(d) Need Not, and Should Not, Stop at the Fenceline. *Ecology Law Quarterly*, **42**(2)235-262. Available at: <https://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?article=2089&context=elq>. Accessed on June 1, 2018.
- EILPERIN, J.; DENNIS, B. 2018. EPA to Roll Back Car Emissions Standards, Handing Automakers a Big Win. Available at: https://www.washingtonpost.com/national/health-science/epa-to-roll-back-car-emissions-standards/2018/04/02/b720f0b6-36a6-11e8-acd5-35eac230e514_story.html?utm_term=.29299dcd284d. Accessed on June 1, 2018.
- ELECTRIC RELIABILITY COUNCIL OF TEXAS (ERCOT). 2016. Long-Term System Assessment for the ERCOT Region. Available at: http://www.ercot.com/content/wcm/lists/89476/2016_Long_Term_System_Assessment_for_the_ERCOT_Region.pdf
- ELLIOTT, D. 2018. Colorado to Adopt California's Stricter Car Pollution Rules. Available at: <https://www.seattletimes.com/business/apx-colorado-to-adopt-california-s-stricter-car-pollution-rules/>. Accessed on June 1, 2018.
- ENGEL, K.H. 2005. Mitigating Global Climate Change in the United States: A Regional Approach. *NYU Environmental Law Journal*, **14**:54.
- ENGEL, K.H. 2016. Climate Change Federalism. In: D.A. FARBER; M. PEETERS, *Climate Change Law*. Northampton, Edward Elgar Publishing, p. 337-347.
- FARBER, D.A. 2015. Coping With Uncertainty: Cost-Benefit Analysis, the Precautionary Principle, and Climate Change. *Washington Law Review*, **90**:1659-1726. <https://doi.org/10.2139/ssrn.2637105>
- FARBER, D.A. 2018. Beyond the Beltway: A Report on State Energy and Climate Policies. *Center for Law, Energy, and the Environment*. Available at: <https://www.law.berkeley.edu/research/cleel/research/climate/beyond-the-beltway/>. Accessed on June 1, 2018.
- FEDERAL REGISTER. 2015. EPA: Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, vol. 80, n. 205, p. 64661-65120. Available at: <https://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22842.pdf>. Accessed on June 1, 2018.
- FREEMAN, J. 2011. The Obama Administration's National Auto Policy: Lessons From the "Car Deal". *Harvard Environmental Law Review*, **35**(2)342-374. Available at: <http://www.law.harvard.edu/faculty/freeman/HLE209-2.pdf>. Accessed on June 1, 2018.
- FREEMAN, J. 2017. The Uncomfortable Convergence of Energy and Environmental Law. *Harvard Environmental Law Review*, **41**:339-421. Available at: http://harvardelr.com/wp-content/uploads/2017/08/Freeman_final.pdf. Accessed on June 1, 2018.
- GEUSS, M. 2018. New York commits \$1.4 billion to renewable energy projects. Available at: <https://arstechnica.com/tech-policy/2018/03/new-york-commits-1-4-billion-to-renewable-energy-projects/>. Accessed on June 1, 2018.
- GOVERNOR NEW YORK. 2017. Governor Andrew M. Cuomo Signs Executive Order and Commits New York to Uphold the Standards Set Forth in the Paris Accord. Available at: <https://www.governor.ny.gov/news/governor-andrew-m-cuomo-signs-executive-order-and-commits-new-york-uphold-standards-set-forth>. Accessed on June 1, 2018.
- GOVERNOR VIRGINIA. 2018. Governor Northam Vetoes Legislation Limiting Virginia's Ability to Fight Global Warming and Create Clean Energy Jobs. Available at: <https://www.governor.virginia.gov/newsroom/all-releases/2018/april/headline-822684-en.html>. Accessed on June 1, 2018.
- HALPER, E. 2017. Trump's vow to scrap the Paris climate change accord faces skepticism from corporations and GOP moderates. Available at: <http://www.latimes.com/politics/la-na-pol-trump-paris-accord-20170215-story.html>. Accessed on June 1, 2018.
- HOSHIJIMA, Y. 2017. Presidential administration and the durability of climate-consciousness. *The Yale Law Journal*, **127**(1):170.
- MALONEY, P. 2018. New Jersey to Rejoin RGGI in New Executive Order. Available at: <https://www.utilitydive.com/news/new-jersey-to-rejoin-rggi-in-new-executive-order/515802/>. Accessed on June 1, 2018.
- MICROSOFT CORPORATION. 2015. Globally Carbon Neutral. Available at: <https://www.microsoft.com/en-us/environment/carbon/>. Accessed on June 1, 2018.
- MOONEY, C. 2017. New EPA Document Reveals Sharply Lower Estimate of the Cost of Climate Change. Available at: https://www.washingtonpost.com/news/energy-environment/wp/2017/10/11/new-epa-document-reveals-sharply-lower-estimate-of-the-cost-of-climate-change/?utm_term=.6b2a8615950a. Accessed on June 1, 2018.
- MULKERN, A.C. 2018. Hawaii Upends Utility Model, Adds Incentives for Solar. Available at: <https://www.eenews.net/energy-wire/2018/04/26/stories/1060080141>. Accessed on June 1, 2018.
- NEW YORK STATE ENERGY PLAN. 2017. The Energy to Lead. Biennial Report to the 2015 State Energy Plan. Available at: <https://energyplan.ny.gov/Plans/2015-Update>. Accessed on August 9, 2018.
- PENN, I. 2018. California Will Require Solar Power for New Homes. Available at: <https://www.nytimes.com/2018/05/09/business/energy-environment/california-solar-power.html>. Accessed on June 1, 2018.
- PIERCE JUNIOR, R.J.; SHAPIRO, S.A.; VERKUIL, P.R. 2013. *Administrative Law and Process*. 6th ed., St. Paul, Foundation Press, 475 p.
- REGIONAL GREENHOUSE GAS INITIATIVE (RGGI). 2018. Elements of RGGI. Available at: <http://www.rggi.org/design>. Accessed on June 1, 2018.
- REUTERS. 2018. Major Automakers Urge Trump Not to Freeze Fuel Economy Targets. Available at: <https://www.autoblog.com/2018/05/07/automakers-trump-cafe-standards-fuel-economy/>. Accessed on June 1, 2018.
- ROBERTS, D. 2018. Latest state to get serious about climate change is... New Jersey? Available at: <https://www.vox.com/energy-and-environment/2018/4/20/17255872/new-jersey-nuclear-renewable-energy-phil-murphy>. Accessed on June 1, 2018.
- ROSENZWEIG, C.; SOLECKI, W.D. 2018. *Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research*. Cambridge, Cambridge University Press, 811 p. <https://doi.org/10.1017/9781316563878>
- SCIENCE NEWS. 2018. Trump, Congress Approve Largest U.S. research Spending Increase in a Decade. Available at: <http://www.sciencemag.org/news/2018/03/updated-us-spending-deal-contains-largest-research-spending-increase-decade>. Accessed on June 1, 2018.
- SHEAR, M.D. 2017. Trump will withdraw U.S. from Paris climate agreement. Available at: <https://www.nytimes.com/2017/06/01/climate/trump-paris-climate-agreement.html>. Accessed on June 1, 2018.
- U.S. GOVERNMENT PUBLISHING OFFICE. 2010a. 42 U.S.C. 7411: Standards of Performance for New Stationary Sources. Available at: <https://www.gpo.gov/fdsys/pkg/USCODE-2010-title42/pdf/USCODE-2010-title42-chap85-subchapl-partA-sec7411.pdf>. Accessed on June 1, 2018.
- U.S. GOVERNMENT PUBLISHING OFFICE. 2010b. 42 U.S.C. 7475: preconstruction requirements. Available at: <https://www.gpo.gov/fdsys/pkg/USCODE-2010-title42/pdf/USCODE-2010-title42-chap85-subchapl-partC-subpartI-sec7475.pdf>. Accessed on June 1, 2018.
- U.S. GOVERNMENT PUBLISHING OFFICE. 2010c. 42 U.S.C. 7607: Administrative Proceedings and Judicial Review. Available at: <https://www.gpo.gov/fdsys/pkg/USCODE-2010-title42/pdf/USCODE-2010-title42-chap85-subchapl-sec7607.pdf>. Accessed on June 1, 2018.
- U.S. GOVERNMENT PUBLISHING OFFICE. 2011. 42 U.S.C. 7479: definitions. Available at: <https://www.gpo.gov/fdsys/pkg/USCODE-2011-title42/pdf/USCODE-2011-title42-chap85-subchapl-partC-subpartI-sec7479.pdf>. Accessed on June 1, 2018.

- U.S. NEWS. 2017. Carbon Cap Rule in Washington State Faces Legal Challenge. Available at: <https://www.usnews.com/news/best-states/washington/articles/2017-05-28/carbon-cap-rule-in-washington-faces-legal-challenge>. Accessed on August 9, 2018.
- UNITED STATES. 2007. Supreme Court. *Massachusetts v. EPA*. Decided April 2, 2007. Available at: <https://supreme.justia.com/cases/federal/us/549/497/>. Accessed on June 1, 2018.
- UNITED STATES. 2011. Supreme Court. *American Electric Power Company v. Connecticut*. Decided June 20, 2011. Available at: <https://supreme.justia.com/cases/federal/us/564/410/>. Accessed on June 1, 2018.
- UNITED STATES. 2012. Supreme Court. *Coalition for Responsible Regulation, Inc. v. EPA*. Filed December 20, 2012. Available at: <https://law.justia.com/cases/federal/appellate-courts/cadc/09-1322/09-1322-2012-12-20.html>. Accessed on June 1, 2018.
- UNITED STATES. 2013. Court of Appeals. *Rocky Mountain Farmer's Union v. Corey*. Filed September 18, 2013. Available at: <https://cases.justia.com/federal/appellate-courts/ca9/12-15131/12-15131-2013-09-18.pdf?ts=1411074201>. Accessed on June 1, 2018.
- UNITED STATES. 2014. Court of Appeals. *Utility Air Regulatory Group v. EPA*. Decided March 11, 2014. Available at: <https://cases.justia.com/federal/appellate-courts/cadc/12-1166/12-1166-2014-03-11.pdf?ts=1411135579>. Accessed on June 1, 2018.
- UNITED STATES. 2017a. Court of Appeals. *Clean Air Council v. Pruitt*. Decided July 3, 2017. Available at: <https://cases.justia.com/federal/appellate-courts/cadc/17-1145/17-1145-2017-07-03.pdf?ts=1499101416>. Accessed on June 1, 2018.
- UNITED STATES. 2017b. Court of Appeals. *Community Voice v. EPA*. Filed December 27, 2017. Available at: <https://cases.justia.com/federal/appellate-courts/ca9/16-72816/16-72816-2017-12-27.pdf?ts=1514397697>. Accessed on June 1, 2018.
- UNITED STATES. 2017c. Court of Appeals. *WildEarth Guardians v. United States Bureau of Land Management*. Filed September 15, 2017. Available at: <https://cases.justia.com/federal/appellate-courts/ca10/15-8109/15-8109-2017-09-15.pdf?ts=1505491258>. Accessed on June 1, 2018.
- UNITED STATES. 2018a. Court of Appeals. *Alaska Oil and Gas Association v. Wilbur Ross*. Filed February 12, 2018. Available at: <https://cases.justia.com/federal/appellate-courts/ca9/16-35380/16-35380-2018-02-12.pdf?ts=1518469252>. Accessed on June 1, 2018.
- UNITED STATES. 2018b. Court of Appeals. *Natural Resources Defense Council v. National Highway Safety Administration*. Decided June 29, 2018. Available at: <https://cases.justia.com/federal/appellate-courts/ca2/17-2780/17-2780-2018-06-29.pdf?ts=1530282607>. Accessed on June 1, 2018.
- VANDENBERGH, M.P., GILLIGAN, J.M. 2017. *Beyond Politics: the private governance response to climate change*. Cambridge/New York, Cambridge University Press, 469 p.
<https://doi.org/10.1017/9781316848555>
- WASHINGTON STATE DEPARTMENT OF ECOLOGY. 2016. Overview of the Clean Air Rule. Available at: <https://ecology.wa.gov/Regulations-Permits/Laws-rules/Closed-rulemaking/WAC-173-442,-441-Overview>. Accessed on August 9, 2018.
- WE ARE STILL IN. 2017. "We are Still in" Declaration. Available at: <https://www.wearestillin.com/we-are-still-declaration>. Accessed on August 9, 2018.
- WESTERN GOVERNOR'S ASSOCIATION. 2018. Policy Resolution 2018-05: Air Quality and Methane Emissions Regulation. Disponível em: http://westgov.org/images/editor/WGA_PR_2018-05_Air_Quality.pdf. Accessed on June 1, 2018.
- WORLD WILD LIFE (WWF). 2016. Business backs low-carbon USA. Available at: <http://wwf.worldwildlife.org/site/PageServer?pagename=lowcarbonusa>. Accessed on August 14, 2018.

Submetido: 10/07/2018

Aceito: 20/07/2018