Chapter 7

The Environmental Protection Agency

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The Environmental Protection Agency (EPA) is the lead U.S. agency responsible for protecting the environment from air and water pollution and for protecting people from the health hazards of pollution and toxic chemicals in the environment. Created in 1970, just a few months after the first Earth Day and before most of today’s major pollution control laws were enacted, it regulates air pollution from cars and smokestacks, water pollution from urban sewers and industrial outfalls, hazardous wastes and municipal landfills, drinking water contaminants, and pesticides and toxic chemicals; and under President Obama, it also began to impose regulations to reduce carbon emissions from motor vehicles as well as power plants and other industries that contribute to global climate change. Environmental and public health advocates see it as the government’s champion for those widely shared values. Some critics, however, accuse it of imposing excessive red tape and unjustified costs on businesses, property owners, and state and local governments; and others accuse it at least of not using the most economically efficient and effective policy tools to achieve its goals.

The EPA itself pioneered the development of innovative new policy tools beyond traditional regulations, to try to reduce environmental risks in the most cost-effective ways. Examples include “market-oriented” incentives, such as tradable emission allowances; information disclosure requirements, such as those for radon and for chemicals covered by the Toxics Release Inventory Program; and elaborate procedures for risk assessment. The EPA also provides subsidized loans for drinking water and wastewater treatment facilities, conducts research to reduce pollution, and provides extensive technical assistance and enforcement cooperation to support state environmental protection programs (see also Chapter 2 on state environmental policymaking).

An unavoidable challenge for the EPA is that the primary tools it has been given by Congress are regulations, and regulations inherently place new restrictions and costs on influential businesses and state and local governments. This chapter discusses how the EPA makes decisions in the face of constant pressures, not only from advocates of environmental protection and the news media but also from businesses, the president, members of Congress, state and local officials, and the courts.

Background

The EPA was created in 1970 by President Richard Nixon, in the midst of a widespread public outcry for the federal government to “do something”
about pollution. The EPA was created not by an act of Congress but through a presidential reorganization plan that pulled together a number of separate programs into a single new agency. Air pollution and waste management programs were transferred from the Department of Health, Education, and Welfare, water pollution programs from the Department of the Interior, pesticide programs from the Department of Agriculture, and some radiation protection programs from the Atomic Energy Commission.

The EPA, or any federal administrative agency, for that matter, can act only under the authority of laws passed by Congress, known as statutes. In approving a new statute, Congress authorizes or prohibits certain kinds of actions, including authorizing the EPA to implement and enforce the statute’s requirements. Appropriations statutes also authorize how much money the agency can spend each year to implement and enforce each of its statutes. A regulation, in contrast, is a standard or rule written by the agency to interpret a statute, apply it in particular situations, and enforce it. In short, Congress directs the EPA to issue regulations to solve a problem, and the EPA must then write the necessary details of the regulations to do so, a process that is often challenging, contentious, and politicized by those who are affected by the regulations. If someone challenges a regulation, decisions by the courts can either confirm or overrule the agency’s interpretation. Statutes, regulations, and judicial decisions all have the force of law.

Beginning in 1970, Congress passed a series of far-reaching new statutes to address pollution and other environmental health hazards and assigned them to the EPA to carry out. These included the Clean Air Act, the Federal Water Pollution Control Act, the Safe Drinking Water Act, and laws regulating pesticides, toxic substances, and solid and hazardous wastes (see Chapter 1 and Appendix 1). Since EPA itself was created only by a presidential reorganization plan rather than by an act of Congress, it functions largely as an umbrella organization managing separate programs to implement each of these laws, plus crosscutting units for enforcement, legal counsel, research and development, and more recently information and financial management. Its administrator has only limited authority to integrate, coordinate, or set priorities among its separate program units except through its annual budget requests. And Congress often does not grant its requests: in recent years, a gridlocked Congress has often passed only continuing resolutions to maintain specified levels of its existing funding, not new appropriations bills, let alone new environmental laws.

One of the main tools Congress gave to the EPA to carry out these laws was the authority to issue regulations. In addition, Congress authorized the EPA to provide technical and compliance assistance to state governments, through ten regional offices; to provide grants to state and local governments to implement federal air and water quality standards, monitor public water supplies, and clean up hazardous wastes; and to provide low-interest loans to local governments to build new drinking-water and wastewater-treatment facilities. Many of these tools thus rely heavily on environmental federalism, discussed in Chapter 2. In 2016, the EPA had a budget of $8 billion, just...
two-tenths of 1 percent of the overall federal budget; but only 22 percent of this was used to pay its fifteen thousand staff members, while nearly half was spent on state and tribal assistance agreements.4

To reduce air pollution, for instance, Congress directed the EPA to set National Ambient Air Quality Standards (NAAQS) specifying how clean the air around us must be in order to protect public health; and it required states to produce state implementation plans (SIPs) for achieving these standards. The law also required all new sources of air pollution to have EPA permits and to use the “best available control technology” to minimize their emissions. Important amendments in 1990 set caps on total emissions of sulfur from all large power plants and allowed polluters to buy and sell their shares of that total—their “emission allowances”—so that companies that do better than the requirements could sell their allowances to companies that found it cheaper to buy more allowances and keep polluting. The law also ordered the EPA to set tailpipe emission standards for cars and trucks that all manufacturers must meet on average across the “fleet” of new vehicles they sell each year.

The Federal Water Pollution Control Act authorizes the EPA to regulate all “point sources” of water pollution (such as factory outfalls and municipal wastewater treatment plants), not just new sources as in the case of air pollution. All point sources of water pollution must get permits from the EPA (or in practice, from the state agency administering the EPA permit program) and must use the “best available technology.” The EPA also provides low-interest loans to fund construction of new publicly owned wastewater treatment plants. However, the EPA was not authorized to regulate pollution from “nonpoint” sources such as farm runoff, due to the influence of the farm lobby. All treatment, storage, and disposal facilities for hazardous wastes also must have EPA permits, as must municipal landfills and incinerators; and all shipments of hazardous wastes must be documented, from the factory where they were generated as waste to their ultimate disposal in a permitted facility.

Each of these statutes addressed a particular environmental problem, but many of them affected the same industries, often with conflicting consequences. Many electric companies complied with air pollution regulations in the 1970s, for instance, by building taller smokestacks to disperse their pollutants so that they would reduce health effects immediately downwind; but this simply caused the pollutants to rain out further away as acid rain, damaging forests and fisheries.5 More recently, the EPA tightened regulations on sulfur dioxide and mercury emissions to protect public health, and to comply, electric utilities put expensive “wet scrubbers” on their stacks to capture these pollutants before they were released into the air; but these materials then were piped into coal ash ponds, some of which later leaked and caused serious water pollution.6 Similarly, sewage treatment improves water quality by removing contaminants from wastewater, but these materials then must themselves be managed, often by landfilling, incineration, or spraying them on farmlands where they may cause new hazards.
In an ideal world, the EPA would design an integrated set of policy incentives to promote pollution prevention, minimizing the use of polluting materials and energy all the way from the initial extraction of resources through production, consumer use, reuse and recycling, and eventual disposal. In practice, however, the EPA must use limited and sometimes expensive tools aimed at separate problems—such as technology-based standards for air and water pollution—to try to solve complex environmental problems whose outcomes are often environmentally interconnected. More recently, Congress has sometimes allowed the EPA to adopt more flexible tools to reduce pollutants, such as cap-and-trade requirements, but these options are available only for a few specific uses approved by Congress, such as limiting sulfur emissions from power plants.

The EPA also regulates individual substances that have environmental health risks, such as pesticides, drinking water contaminants, and toxic chemicals used in manufacturing. Before doing so, however, it must undertake an elaborate process of “risk assessment” to determine how serious a hazard a substance is and how many people might be exposed to it, and the agency must then balance its risk against the economic benefits and costs of restricting it.

The EPA and the laws it administers were created with broad bipartisan support, and the agency itself and most of its laws were even approved by Republican presidents. Supporters of the agency argue that the EPA has made valuable and cost-effective contributions, given the tools, funds, and limitations Congress has given it, toward cleaning up air and water pollution and hazardous wastes and preventing toxic chemicals from endangering public health and the environment. Critics argue, however, that its regulations are burdensome to the industries, small businesses, and state and local governments that must comply with them, even though most have been documented as having greater overall benefits to society than their costs. They also charge that these regulations hurt jobs and profits; that the EPA sometimes fails to do its job effectively (for example, when it failed to protect drinking water in Flint, Michigan, from lead contamination); and that the agency should therefore be reined in or even abolished.

Consider, therefore, three examples of EPA regulations and how they were developed. How can the EPA reduce air pollution from coal-fired power plants? How can it reduce human exposure to toxic chemicals such as arsenic? And how can it reduce emissions of greenhouse gases (GHGs) such as carbon dioxide, which contribute to global climate change but were not considered when Congress passed the Clean Air Act?

Air Pollution from Electric Power Plants

Coal-fired power plants are one of the most significant sources of air pollution, including particularly sulfur dioxide (SO₂), nitrogen oxides (NOₓ), particulates, and mercury (as well as GHGs, discussed later). As of 2008, the United States had 1,466 coal-fired generating units, most of them built...
before 1990; 58 percent of them were built even before the landmark Clean Air Act requirements of 1970.9

When Congress passed the Clean Air Act in 1970, it directed the EPA to set air pollution emission standards for all new facilities. Each of these must meet “new source performance standards,” based on “the best emission reduction technology that had been adequately demonstrated, taking into account its cost.” However, it exempted existing power plants so long as they were not modified. Retrofitting existing plants would have been far more expensive, and some state economies were heavily dependent on coal mining and use, so Congress preferred to assume that these old sources would gradually be phased out anyway. If an existing facility underwent “any” physical change or change in method of operation that would increase emissions, however, it would become subject to the new source standards as well.10 The 1977 amendments to the Clean Air Act added a specific permit requirement, New Source Review (NSR), before construction of any new or modified facility that might increase air pollution.11

The EPA faced the question, therefore, of how to interpret this mandate. Did Congress really intend it to require costly new pollution controls for literally “any” physical or operational change in an existing facility? Or did Congress really mean to leave existing facilities alone so long as changes to them did not cause significant increases in air pollution? The EPA’s initial regulations tried to strike this balance by setting a threshold: “any,” it said, meant only a modification that would increase emissions by more than fifty tons of emissions per year. But it was immediately sued, both by environmental groups and by electric utility companies, and the court rejected this interpretation, holding that the “plain language” of the law meant “any” modification that results in more than a minimal increase in emissions.12

The EPA then revised its regulations to exempt “routine maintenance, repair, and replacements,” as well as modifications that added only minimal amounts of pollutants. But once new power plants were more strictly controlled than existing ones, the utilities had a greater incentive to keep the old plants operating longer, and also to upgrade them as much as they could without triggering the NSR process. They did this by “spreading out” upgrades to the facilities over multiple years, integrating these upgrades into their operating and maintenance schedules, and then arguing that this was all part of “routine” maintenance for plant “rehabilitation”—even though the intended effect was to keep these old facilities operating longer, and sometimes at higher levels of emissions.13

These practices were tolerated by the EPA under Presidents Ronald Reagan and George H. W. Bush during the 1980s, but President Bush also introduced an innovative new solution by creating a “cap-and-trade” system, capping total emissions of sulfur from all large power plants and allowing the utilities to trade emission allowances among both existing and new plants to stay within the cap. This allowance market was highly effective in reducing total emissions, but it did not protect downwind communities from the emissions of particular facilities that bought the allowances and kept on polluting.
President Bill Clinton’s EPA administrator, Carol Browner, therefore began an aggressive investigation into evasion of the NSR requirements by old coal-fired power plants, and filed suit against thirteen electric utilities for violations at fifty-one plants in thirteen states. The utilities fought back, arguing that the EPA was now trying to enforce a more restrictive definition of “routine maintenance” than in the past; and they also spent heavily to support George W. Bush’s successful presidential campaign over Clinton’s vice president, Al Gore.

Once Bush was elected, the utilities lobbied vigorously to loosen the NSR rules, and in 2003, Bush’s EPA officials proposed a new NSR rule that redefined “routine maintenance” as any upgrades that did not cost more than 20 percent of the plant’s value—a huge loophole—and announced a weaker enforcement policy, dropping some seventy-five NSR enforcement investigations. Environmental and public health groups objected strenuously, and fourteen states sued to block the rule changes. In 2003, a court ruled that one of the utilities had indeed violated the NSR rules eleven times at one of its plants; and in 2005 and 2006, the U.S. Court of Appeals for the District of Columbia rejected the Bush EPA’s changes to the rules, holding that when Congress had originally applied NSR to “any” physical or operational changes that would increase pollution, it did indeed mean “any,” not just those costing more than 20 percent of the facility’s value.

In the closing months of the Bush administration, his EPA officials tried once more to weaken NSR by substituting more discretionary (and thus less enforceable) criteria for review. Once President Obama took office, however, an environmental advocacy group immediately petitioned the new EPA administrator to reverse this change, and she did. After a decade and a half of litigation and a reaffirmation of support for NSR by a new president, the EPA ultimately took enforcement actions against some 45 percent of the country’s electricity generating units, leading to 22 major settlements covering 263 units.

What lessons does this case offer about how the EPA makes decisions? First, the issues involved are rarely simple and straightforward. The Clinton and Obama administrations, as well as the courts, generally supported the “plain language” of the NSR requirement—ironically, a position more often advocated by the most conservative judges. In contrast, some independent critics—not just the utilities—have argued that the NSR requirement itself prolongs the problem, by perpetuating the difference in cost that motivates power companies to keep using old coal-fired power plants rather than new ones with expensive end-of-pipe controls. In these critics’ view, a strict cap on overall emissions of both new and old power plants, combined with tradable permits, would achieve far greater pollution reduction. Others support a trading program, but one with safeguards to prevent regional “hot spots” of continued pollution downwind of the plants that choose to buy permits and keep polluting: a good example is the EPA’s more recent Cross-State Air Pollution Rule (the “good neighbor rule”), which limits upwind states’ overall emissions that interfere with downwind states’ compliance. Still others have argued that the EPA should simply phase out the “routine repair and maintenance” exemption.
Second, the EPA itself is rarely the final decision maker. Almost any significant EPA decision will be challenged in lawsuits, either by the regulated businesses or by environmental advocacy groups or both. The courts thus play an essential role in EPA decision making, often supporting protective interpretations of the environmental laws, but not always (see also Chapter 6 on environmental policy in the courts).

Finally, the EPA’s decisions rarely remain settled. Its decisions change economic outcomes for businesses that are regulated, thus creating ongoing incentives for companies to challenge regulations rather than comply. These challenges include not only petitions and lawsuits but also attempts to reverse EPA policies by congressional legislation or budget provisions and by electing presidents with different philosophies.

Toxic Chemicals: Arsenic in Drinking Water

In addition to pollutant emissions and other wastes, the EPA is responsible for protecting public health from toxic chemicals in drinking water, pesticides, and other products. These include thousands of substances, far too many to address individually in laws. Many have not been well studied, and many are not wastes but have profitable economic uses. How should the EPA decide which ones to study, let alone to regulate, and how tightly should it regulate them? And to what extent should those decisions be based on documented public health risks, on the economic costs and anticipated benefits of restricting contaminants, and on expert opinions about risks that appear possible or even likely but remain uncertain?

To control toxic chemicals, Congress enacted “risk-based” and “risk-balancing” statutes. The air and water emission standards had required the EPA only to show that the “best available technology” they required was already being used by the best firms in each industry. In contrast, for risk-based regulation, the EPA must present “substantial evidence” to prove that a chemical poses an “unreasonable risk” to public health and that this risk outweighs the economic costs of restricting it. And the agency must continually update all the scientific and economic evidence for each chemical. This places a heavy and costly burden of proof on the agency, especially with a limited budget and staff and the fact that scientific knowledge about many chemicals is limited, uncertain, contested, and constantly changing.

An example is the risk of arsenic contamination in drinking water. Arsenic can cause nausea, diarrhea, numbness, blindness, paralysis, and even death, and it has been linked with several lethal kinds of cancer. As one member of Congress commented, “Anyone who has read an Agatha Christie novel knows that arsenic is a poison.” Yet it can be found in many Americans’ drinking water, sometimes due to industrial wastes or agricultural use but often also as a natural contaminant. How then should the EPA decide how much to protect people from a health risk, when that decision also imposes costs on them to do so?

Under the Safe Drinking Water Act of 1974 (SDWA), the EPA became responsible for setting maximum contaminant levels (MCLs) for...
contaminants in public water supplies. These water suppliers included not only large cities and towns but also rural communities serving as few as fifteen households or twenty-five people, for which even testing regularly for contaminants would be a major expense, let alone removing them, since the costs were spread across so few households. In 1996, Congress amended the SDWA by creating a Drinking Water State Revolving Fund to provide low-interest loans for local water-supply improvements, and it also required the EPA to determine that the health benefits of its proposed MCLs exceeded their economic costs; if they did not, the EPA was to impose an MCL that “maximizes the benefits of health risk reduction only to the extent that the cost is justified by the benefits.” For small water systems, the EPA administrator also was allowed to require a technology that did not fully meet the MCL but was considered affordable and provided some public health benefits.

The EPA adopted an initial MCL for arsenic in 1975, set at 50 micrograms per liter (equivalent to 50 parts per billion, or ppb). This MCL was based on a standard set by the Public Health Service in 1942, with the limited scientific knowledge available at the time. From the outset, however, many EPA scientists as well as public health and environmental advocacy groups questioned whether that level adequately protected public health. As early as 1962, the Public Health Service recommended that “the concentration of arsenic in drinking water should not exceed 0.01 mg/l and concentrations in excess of 0.05 mg/l are grounds for rejection of the supply” (that is, 10 and 50 ppb, respectively).24 In 1988, an EPA risk assessment concluded that based on three recent epidemiological studies conducted in other countries, arsenic in drinking water should be considered a potential carcinogen as well as a poison.

In 1993, the World Health Organization adopted the 10 ppb limit, as did the European Union. Local U.S. water suppliers, however, continued to resist requirements that they provide costly water treatment, and there was still enough controversy over scientific uncertainties that the EPA did not tighten the standard. For instance, how similar were U.S. populations to those exposed to arsenic in other countries, how accurately could the EPA measure arsenic at levels of 3 ppb, and how much was it really worth to require very small water systems to pay to prevent small numbers of statistical cancer risks? A citizen group sued the EPA to demand that it tighten its regulations, however, and the EPA signed a consent decree promising to do so, but the agency then repeatedly requested extensions of the court’s deadlines. Finally, in 1996, even a conservative-led Congress passed amendments to the SDWA that ordered the EPA to issue a revised draft MCL for arsenic by 2000 and a final rule by 2001. The EPA’s appropriations bill in 2000 also ordered it to issue a final arsenic standard no later than June 22, 2001.

Beginning in 1996, the EPA responded by commissioning an independent scientific review by the National Research Council (NRC) and also by conducting extensive meetings with state, local, and tribal governments; water supply utilities; and other stakeholder groups. In 1999, the NRC concluded that based on both the earlier studies and more recent scientific information,
arsenic should be considered a serious carcinogen. It also concluded that arsenic could cause non-cancer health effects at as little as 1 ppb exposure and that it could be reliably measured down to a level of at least 4 ppb. It recommended, therefore, that the 50 ppb standard should be significantly tightened.25 On the basis of these studies, the EPA set an MCL goal of zero and considered setting an actual MCL of 3 ppb. But in June 2000, recognizing the cost burden this might impose on small water systems as well as the measurement challenges at such low levels, it proposed an MCL of 5 ppb as the level that “maximizes health risk reduction at a level where costs and benefits are balanced.” It also conducted a “regulatory impact assessment”—a benefit-cost analysis—which concluded that if one based a decision solely on the costs and benefits of reducing bladder cancer, an MCL of 3, 5, 10, or even 20 ppb would have economic costs greater than its benefits, but that reducing arsenic exposure to these levels would also provide many other health benefits, although data did not exist to quantify them.26

The EPA then requested comment on the draft regulation from the public and from its Science Advisory Board, and the agency was sued by an environmental group pressing for the 3 ppb standard. In January 2001, it finally issued a regulation reducing the arsenic MCL from 50 to 10 (rather than 5 or 3) ppb.

In short, it took nearly forty years from the Public Health Service’s recommendation of 10 ppb in 1962, and twenty-seven years from the time the EPA was given responsibility to regulate drinking water contaminants under the SDWA, before the EPA finally limited arsenic in drinking water to 10 ppb. Despite all the scientific reviews and risk assessments, the EPA’s decision ultimately was still a discretionary administrative judgment that sought to “balance” assumptions about the effects of arsenic on cancer and other health risks, the economic benefits of preventing these effects, the practical costs of doing so, the relevance and persuasiveness of the scientific studies available, and other factors. EPA data also suggest that another reason for choosing 10 ppb may have been simply the number of water utilities that would have to comply: in the twenty-five states for which data were then available, fewer than 1,300 water systems would have to reduce their arsenic to reach 10 ppb but more than twice as many would require action to reach 5 ppb and nearly 2,000 more to reach 3 ppb.27

This “final” rule was not the end of the story, however. In late January 2001, the Clinton administration departed, and in March, President Bush’s new EPA administrator, Christine Todd Whitman, suspended the rule for further review, claiming that she wanted to “replace sound-bite rule making with sound-science rule making” and to be “sure that the conclusions about arsenic in the rule are supported by the best available science.” The implied message was that despite nearly forty years of study since the Public Health Service’s recommendation in 1962 and the nine years that had passed since the World Health Organization adopted the same recommendation, the Clinton administration had somehow rushed the rule to completion before its term ended based on poor science.
The administrator’s decision was applauded by westerners concerned about the rule’s cost for communities with naturally occurring arsenic in their water, by the industries that produced and used arsenic, by antiregulatory conservatives more generally, and by some economists who argued that the EPA’s benefit estimates were overstated. However, a firestorm of public opposition and media criticism followed. The decision to suspend the arsenic rule came just a week after Bush had reversed his commitment to reduce greenhouse gas emissions and withdrawn the United States from the Kyoto Protocol on global climate change. Suspension of the arsenic rule as well seemed to prove the Bush administration’s hostility to environmental regulation. An environmental group sued the EPA again, demanding that it implement the regulation. Even the House of Representatives, with significant Republican support, proposed legislation to require a standard no less stringent than 10 ppb. Administrator Whitman commissioned several reviews of the rule, both within the EPA and by the NRC, and the NRC confirmed its 1999 findings, adding that new information might justify an even stronger standard. In October, Whitman finally reconfirmed the new rule at the 10 ppb level, acknowledging that whatever the scientific and economic uncertainties, her suspension of the rule had been a political and public relations disaster.

The arsenic MCL was thus finally confirmed at 10 ppb, and the EPA then had to implement it. According to the EPA, only 4,100 of the nation’s 74,000 water systems would have to reduce arsenic contamination to comply with the rule, but the vast majority of these were very small systems: 73 percent served fewer than one thousand people, and 30 percent served fewer than one hundred. For many of these water systems, the arsenic rule required the first water treatment of any kind that they had been required to provide. Many of these systems might therefore be given exceptions or waivers, which in turn would reduce the rule’s effectiveness in protecting public health.

What lessons does this case teach? First, substance-by-substance regulation of contaminants is a far slower and more difficult process than technology-based or cap-and-trade regulation of air or water pollution. Despite decades of precedents by the Public Health Service and the World Health Organization, sustained lobbying and lawsuits by public health and environmental advocacy organizations, and even congressional mandates and deadlines, in the face of resistance from water utilities and their public officials, it required an outgoing presidential administration that was determined to leave a strong environmental legacy and had relatively few political debts to most of the states most affected, as well as a major public outcry in the media, to force the EPA finally to issue the regulation in 2001.

Second, a key reason for the EPA’s slow regulatory process is that risk-based, substance-by-substance regulation imposes a heavy burden of proof on the agency. The EPA relies on independent external scientific organizations, such as its Science Advisory Board and the NRC, to validate its justifications; but despite the best science and economics available, significant uncertainties remain, as well as budget and staff constraints. The agency’s decisions
therefore remain discretionary administrative “balancing” judgments, relying on assumptions about the remaining uncertainties, and the agency knows that these assumptions will always be attacked by opposing interests in the courts and the Congress. One could even argue that the EPA regulates most effectively when it has least discretion: when Congress sets a specific criterion by statute, for instance, as it did for motor vehicle emissions (95 percent reduction of average new car emissions by 1975) and new air pollution sources (requiring best available technology for new or modified emissions sources).

Finally, the EPA’s decisions are deeply influenced by their anticipated impacts on small businesses and local governments, and these impacts pose significant challenges for the EPA in designing effective policies. As of 2012, an estimated six hundred water systems were still out of compliance with the 10 ppb standard. One could argue, therefore, that a 10 ppb national standard was too stringent to be achieved by the very small systems yet not as stringent as would be justifiable for larger ones. Some economists argued that since drinking water quality was an inherently local issue, the EPA should simply require disclosure of contaminant levels and their associated risks and leave regulation to local choice. However, this approach would run contrary to the EPA’s mandate to protect all Americans and to a substantial literature showing that people often make bad choices in such situations and that the resulting burdens of ill health often fall on others (such as children and taxpayers who must pay for extra health care costs).

Greenhouse Gas Emissions and Climate Change

A final case raises this question: How can the EPA deal with a newly identified environmental problem that was not fully anticipated when its regulatory statutes were enacted?

Climate change has been an important public policy issue since the late 1970s, when scientists proposed that global warming was increasing beyond its historic range due to carbon dioxide emissions from human activities: in particular, fossil fuel combustion in power plants, other industries, and motor vehicles. In 1987, Congress directed the EPA to develop a coordinated national policy on climate change, but most early policymaking focused on crafting an international agreement—the 1992 Framework Convention on Climate Change, which the United States adopted, and the 1997 Kyoto Protocol, which it did not—rather than on policies to control domestic emissions. The Kyoto Protocol included binding targets for GHG emission reductions, which President Clinton agreed to but the U.S. Senate in 1997 voted overwhelmingly to reject unless industrializing countries such as China were also held to them. With Clinton’s support, therefore, the EPA began to assert a more active policy role. In 1998, its legal office issued an opinion that EPA had the authority to regulate GHG emissions under the Clean Air Act even though it had not previously done so. In 1999, a group of environmental organizations and renewable energy businesses, citing this opinion, petitioned the EPA to regulate GHG emissions from new motor vehicles under the
Clean Air Act; and in January 2001, just as the Clinton administration left office, the EPA invited public comments on this petition, which produced nearly fifty thousand responses during the first five months of the incoming Bush administration.

While Bush was campaigning for the presidency against Al Gore in September 2000, he pledged that “[w]e will require all power plants to meet clean-air standards in order to reduce emissions of carbon dioxide within a reasonable period of time.” Once elected, however, he renounced this pledge and ended U.S. participation in the Kyoto Protocol negotiations; and his new appointee as the EPA’s legal counsel issued a reinterpretation arguing that, contrary to the agency’s previously issued opinion, the EPA did not have authority to regulate GHGs as air pollutants under the Clean Air Act. Bush’s EPA officials also rejected the petition that had called on the EPA to regulate GHG emissions from motor vehicles. Unlike other regulated air pollutants, they argued, GHGs were only significant at a global scale and therefore were not amenable to the national- and state-level regulations provided by the Clean Air Act. Moreover, they argued that such a far-reaching new regulatory initiative should only be undertaken with explicit direction by Congress and after more extensive research, and that in the 1990 Clean Air Act amendments, Congress itself had only directed the EPA to pursue research and non-regulatory solutions for GHG emissions.

Led by the state of Massachusetts, however, a group of states, cities, and environmental groups challenged this reinterpretation and asked the courts to require the EPA to regulate GHG emissions from motor vehicles. In 2005, the initial court upheld the Bush EPA’s interpretation, but in 2007, the Supreme Court ruled that GHGs did fall within the Clean Air Act’s definition of air pollutants and that the EPA therefore did have authority to regulate them. Given that authority, the court said, the EPA also had a legal responsibility to determine whether they “cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare” (an “endangerment finding”). An affirmative endangerment finding, in turn, would automatically trigger an EPA obligation to set GHG emission standards.

In 2009, following the election of President Barack Obama, a bipartisan group of congressional leaders tried but ultimately failed to enact new legislation that would have created a cap-and-trade regime to reduce GHG emissions. Given the Supreme Court’s Massachusetts decision as a mandate and President Obama’s commitment to address the problem, the EPA thus became the lead agency to try to reduce GHG emissions. The new administrator issued an endangerment finding in 2009, concluding that GHGs did indeed contribute to risks to public health and welfare and that emissions from new cars and trucks contributed to these effects. President Obama then announced a joint initiative by the EPA and the Department of Transportation to coordinate the regulation of GHG emissions and of motor vehicle fuel efficiency, and several of the major car manufacturers and other major corporations announced their support. The motor vehicle standards (the “Tailpipe Rule”) were finalized in 2010 and tightened further in 2012.
An additional implication of the endangerment finding, however, was that once an emission is regulated as an air pollutant under any part of the Clean Air Act (motor vehicle emissions, in this case), all major stationary sources automatically became subject to regulation as well. This principle empowered EPA to regulate GHGs from stationary as well as mobile sources, but it also had unintended consequences: “major” stationary sources had been defined as those emitting more than one hundred tons per year of traditional air pollutants, which meant only large industrial facilities and power plants; but far more facilities might emit that amount of carbon dioxide, including many hospitals, schools, restaurants, office buildings, farm buildings, and other establishments. The number of sources required to have permits thus could potentially increase from fewer than fifteen thousand to over six million, even though most of them were relatively small contributors to total GHG emissions. Annual administrative costs would increase from $62 million to $21 billion, and the newly regulated sources would face permitting costs estimated at $147 billion. In 2010, the EPA therefore issued a rule requiring permits for new or modified GHG sources but “tailoring” these regulations to focus only on the largest sources—the power plants and other industrial facilities that emitted more than one hundred thousand tons of GHGs per year—while excluding the many smaller and nonindustrial facilities. In 2012, the EPA also proposed performance standards requiring that all new or modified power plants use the “best system of emission reduction” (BSER) for GHGs, and in 2013, it issued a revised version of this standard.

These standards relied on a crucial assumption: that carbon capture and storage (CCS) technologies had been “adequately demonstrated” as a “best system of emission reduction,” even though only a handful of CCS facilities were actually operating so far, or that other options such as energy efficiency improvements could be used to achieve the reductions. The EPA’s rationale was that few new coal-fired power plants were planned before 2020 and that new plants after that were already being designed to include CCS technology. Businesses and states opposed to the rule argued, however, that these technologies had not yet been adequately demonstrated at a commercial scale.

Two further complications also followed. First, issuing a performance standard for new power plants also triggered a requirement for the EPA to develop guidelines that states must use to reduce emissions from existing facilities, as part of their required “state implementation plans” for complying with the Clean Air Act. In June 2014, the EPA issued the Obama administration’s “Clean Power Plan” (CPP), a proposed rule that set state-specific goals based on each state’s power-plant GHG emission rates. The goal of the rule was to reduce overall power-plant GHG emissions by 30 percent from 2005 levels, while allowing each state to adopt flexible strategies for doing so that best suited its circumstances. If a state did not submit a plan that satisfied the EPA’s guidelines, EPA could write a plan for the state itself. The final CPP rule was issued in October 2015; initial state plans were to be completed by September 2016, and final ones by September 2018.
Second, because only some of the necessary emission reductions would likely be achieved by the existing power plants, the states would have to use additional measures to achieve the goals, such as increasing the substitution of natural gas and renewable energy for coal, avoiding the retirement of existing nuclear plants, increasing energy efficiency, adopting market-based incentives, and perhaps joining multistate cap-and-trade programs. Critics immediately argued that the CPP stretched the EPA’s use of planning guidelines under environmental federalism beyond previous precedents and without legal authority.

In 2013 a group of utilities, other carbon-intensive industries, and some states and public officials (the “Utility Air Regulatory Group,” or UARG) petitioned the Supreme Court to overrule the EPA’s regulation of GHG emissions from stationary sources, arguing that CCS technology had not yet been adequately demonstrated and that trying to regulate GHG emissions from stationary sources would thus expand EPA regulation far beyond what Congress had intended in the Clean Air Act (the Massachusetts decision had only addressed motor vehicle emissions, not the effects of this decision in triggering the regulation of other sources as well). In its decision in this case in June 2014, the Supreme Court confirmed that the EPA had the authority to regulate GHG emissions from stationary sources that also emitted other pollutants specifically covered by the Clean Air Act. It also ruled, however, that the EPA could not regulate other sources solely for GHGs without congressional approval, nor did it have administrative discretion to change the specific tonnage triggers in the law (from one hundred to one hundred thousand tons per year) to solve the awkwardness of trying to “tailor” these provisions to “major” GHG sources. In effect, under this ruling the Supreme Court confirmed the EPA’s authority to regulate sources of 83 percent of GHG emissions but protected many other smaller sources from becoming newly subject to EPA regulation without congressional action.44

In the same month as the court’s UARG decision, the EPA announced its proposed Clean Power Plan rule, and the coal industry, along with twenty-six state governments and hundreds of other businesses and business organizations, immediately sued the EPA again to try to block it. The EPA, they argued, was trying to force the states to reduce GHGs by taking actions far beyond the actual performance of the regulated power plants themselves, using the Clean Air Act not just to reduce the power plants’ own emissions but to try to create a whole new low-carbon energy economy. The EPA responded—supported by eighteen other states, many local governments, businesses, and environmental groups—by arguing that the flexibility it was offering to the states was in fact a classic case of cooperative environmental federalism: consistent with the original Clean Air Act and similar to previous environmental regulations, it set a national goal to reduce emissions endangering public health and welfare and allowed states broad flexibility to develop plans to achieve it.

The rule was finalized in August 2015, but in February 2016, a 5–4 majority of the Supreme Court put the rule on hold until the court case was decided,
and in September 2016, the U.S. Court of Appeals for the District of Columbia Circuit heard oral arguments on the case. In November 2016, meanwhile, Donald Trump was elected president, and on taking office he immediately issued an executive order directing the EPA to review the Clean Power Plan rule with the expectation of rescinding it. His new EPA administrator—the former attorney general of Oklahoma, and an outspoken opponent of climate-change regulations—then sent a letter to state governors declaring that “the days of coercive federalism are over” and telling them that they had no obligation to comply with the rule while it was on hold.

This case thus offers several further lessons. First, as in both the previous cases, the EPA’s decisions are driven by both internal and external forces, including its own staff, environmental and business advocacy groups, presidential policy preferences, and court decisions. Key decision points in this case included a memo from the EPA’s legal staff under a supportive Clinton administration; a petition by environmental groups, based on this memo, asking the EPA to regulate carbon emissions from motor vehicles; a contrary memo by President Bush’s EPA officials, disavowing that interpretation and rejecting the petition; a Supreme Court decision reaffirming the previous interpretation; a series of subsequent EPA rules under the Obama administration implementing that interpretation; a further Supreme Court decision affirming the EPA’s authority to regulate but specifying more clearly the rationale and limits of that authority; an EPA rule implementing that authority but delayed by the Supreme Court pending final judicial review; and, following the 2016 election, a presidential executive order directing the EPA to review and presumably rescind the rule.

Second, as in the previous two cases, the EPA’s policies clearly are influenced by presidential politics. Its first administrator, William Ruckelshaus, sought vigorously to establish its independence as a regulatory agency responsible first and foremost to faithfully execute the laws, based on the best science and economics available, even when that mission conflicted with President Nixon’s business supporters. Beginning with the Reagan administration in the 1980s, however, the agency’s policies became much more subject to change based on presidential politics, though those changes remained constrained by judicial oversight. The EPA’s position on regulating GHG emissions changed significantly from the Clinton to the Bush administration and again under Obama, and yet again under President Trump; a critical question still unanswered is the extent to which President Trump’s appointees will be upheld by the courts in their initiatives to change regulations put in place by their predecessors.

Third, what may appear to be relatively straightforward choices, such as whether the EPA should protect the environment by regulating GHG emissions from cars and trucks, can trigger far more complex consequences. In this case, it triggered regulatory consequences for thousands of stationary sources as well. If the CPP is upheld and not rescinded, there will be consequences also for state governments, which must develop state implementation plans to meet the EPA’s compliance targets. Many observers believe that a broad-based carbon tax or cap-and-trade system would be more effective
and more workable, whether or not they support that goal; but either of those tools would require new legislation, which Congress so far has been unable to pass. State cap-and-trade programs may be another option, but a more effective national solution would require congressional action (see also Chapter 2 on state environmental policymaking).

Achievements and Limitations

Overall, using the regulatory tools it has been given, the EPA has accomplished a great deal in making the environment cleaner (see Chapter 1). Air pollution has been dramatically reduced, and regulations for cars and trucks have produced major improvements in motor vehicle design to reduce air pollution and increase fuel efficiency. The EPA’s permit requirements also have greatly reduced water pollution from wastewater treatment plants and industrial discharges, although runoff from farms, construction sites, and other nonpoint sources continues to cause serious problems. Solid and hazardous wastes are now managed far more safely: the EPA’s regulations closed more than five thousand open-burning dumps in the 1970s, and municipal and commercial landfills are now far better managed by professionals under permit standards set by the EPA. The EPA itself has pioneered some of the most important innovations in environmental policy, such as emissions trading and information disclosure requirements.

The EPA’s risk-based, substance-by-substance regulations of hazardous chemicals have had far more limited success. They have banned or restricted a few highly visible and controversial toxic chemicals, but due to scientific uncertainties, limited staff and resources, political and legal resistance, and the heavy burden of proof it must sustain, the EPA has actually studied and regulated very few. One small ray of hope for the future was a rare bipartisan vote by Congress in 2016 to pass the Lautenberg Chemical Safety Act. The new law reformed the EPA’s least effective mandate—the Toxic Substances Control Act—by making all commercial chemicals subject to EPA review, prioritizing those that posed the greatest risks, and giving the EPA broader options to manage these risks and to require more safety testing.

Both business advocates and policy scholars have sometimes criticized the EPA’s regulations. Businesses often criticize them because of the additional costs of compliance, sometimes disregarding the “external” costs of the health effects and other economic damage that their own pollution imposes on others. Policy scholars often criticize the regulations as economically inefficient and discouraging of innovation: technology-based permit requirements, they argue, sometimes impose extra costs on firms that could reduce pollution more cheaply in other ways, and “best available technology” requirements tend to “lock in” the best existing technology rather than encouraging the discovery of more innovative solutions. Policy scholars have repeatedly recommended the use of markets, environmental taxes, information disclosure, and other innovative policy tools to achieve environmental protection more efficiently and effectively (see Chapter 10).
In reality, however, the EPA can use only the tools that Congress has authorized, which often do not yet include innovative solutions that have been proposed. It therefore has tried to use the regulatory powers it does have to address new problems, such as allowing trading of emission allowances, redefining animal feedlots as point sources, regulating genetically modified organisms as pesticides, and regulating greenhouse gases as dangers to public health and welfare. These are sometimes awkward substitutes, however, for designing more effective policies by statute.

The EPA’s Future

Donald Trump was elected president in November 2016, after a campaign that included promises to revitalize the coal industry, get rid of “burdensome” environmental regulations—especially those addressing climate change—and drastically reduce or even abolish the EPA. He immediately rescinded all of President Obama’s presidential directives on climate change and ordered the EPA to review and potentially rescind the Clean Power Plan, GHG emission standards for cars and trucks, and several other major EPA regulations. He also issued an executive order requiring that the agency must rescind at least two existing regulations before approving any new one, and that it should focus only on reducing compliance costs rather than on the benefits of regulations. And he appointed as EPA administrator the attorney general of Oklahoma, Scott Pruitt, who had declared himself skeptical of human effects on climate change and who had sued the EPA 14 times—in most cases, in collaboration with regulated industries, and so far unsuccessfully—to try to block the Clean Power Plan, the Cross-State Air Pollution Rule, and other EPA regulations, as examples of “federal overreach.”

In an initial “budget blueprint,” Trump proposed narrowing the EPA’s scope to focus on its “core legal requirements,” leaving many of its responsibilities to the states and “easing the burden of unnecessary regulations that impose significant costs on workers and consumers without justifiable environmental benefits.” To do this, he proposed cutting the EPA’s budget by 31 percent, and its staff by 3,200 people. Under the proposal, support would continue for locally popular drinking-water and wastewater-treatment grants programs, but the agency’s research funds would be cut by nearly half, its enforcement budget by nearly a quarter, and its hazardous waste cleanup funds by 30 percent. Trump also proposed eliminating funds for the EPA’s climate change programs, its cleanup programs for major multistate resources such as the Great Lakes and Chesapeake Bay, and more than 50 other programs. Even as EPA administrator Pruitt praised environmental federalism and talked up closer EPA partnerships with the states, the budget blueprint proposed leaving many more responsibilities to the states while cutting the EPA’s categorical grants—which support the state and tribal environmental agencies—by 44 percent.
Congress responded with a bipartisan funding bill for the rest of 2017 that rejected nearly all these cuts, and Trump signed it. In May 2017, however, he sent Congress a proposed budget for 2018 that would cut the EPA's budget by nearly one-third and its workforce by 20 percent, the largest cuts for any federal agency. They included a 40 percent cut in its enforcement budget, 45 percent cuts in its research budget and its implementation and enforcement grants to states, a 50 percent cut in funds for setting drinking water standards, and a 25 percent cut in hazardous waste cleanup funds. Once again, he proposed eliminating the funding of all EPA's cleanup programs for geographic regions such as the Great Lakes, Chesapeake Bay, Puget Sound, and others, and abolishing the widely popular Energy Star program that provides energy-efficiency ratings for appliances. And he proposed severe cuts in funding for climate science research and monitoring. These reductions would affect not only the EPA but also NASA's Earth monitoring satellites, NOAA's climate-related studies, and even the National Science Foundation's basic climate research, as well as most of the Department of Energy's clean-energy programs.

What then is the likely future of the EPA? One outcome could indeed be the radical diminution of the agency that Trump has proposed. During the initial months of the Trump administration, Congress revoked proposed EPA rules to protect streams from mining debris, and Trump's EPA administrator revoked proposed rules that would require the reporting of methane emissions and ban a widely used insecticide that scientists had found to cause damage to fetal brains and nervous systems. In addition to the Clean Power Plan review, the EPA administrator also announced reviews of rules that protect wetlands (the Waters of the United States [WOTUS] rule), require greater fuel efficiency by cars and trucks, and limit toxic wastewater discharges from power plants, among others. He declined to reappoint many of the members of several of the EPA's major scientific review boards, and he removed information about climate change from several of the EPA's websites. And even before congressional action on Trump's proposed budget cuts, Administrator Pruitt imposed a hiring freeze and began a process for the buyout or early retirement of more than 1,200 of the EPA's staff, about 8 percent of its workforce. A study of EPA's enforcement actions during Trump's first six months found that both the number of enforcement cases and the civil penalties collected were significantly lower than during the same period under Presidents Clinton and Obama and even under George W. Bush.

President Reagan tried once before to “deregulate, defund, and delegate” the EPA's responsibilities, but it did not end well for him: the public and many members of Congress mobilized to “save EPA,” he was forced to retreat and replace most of the agency’s leadership, and, in the next elections, the public voted in congressional majorities supportive of the agency. The second President Bush also tried to weaken environmental regulations by reinterpreting them, but he too was then confronted with a more environmentally supportive Congress during his second term.
Trump could perhaps be more successful. First, his appointees to the EPA are more politically experienced, and the present congressional majorities are both more conservative and perhaps safer in their seats than those in the 1980s. However, the extent to which he will ultimately succeed in weakening the EPA is by no means certain. He was easily able to cancel rules that had not yet been finalized, but once rules have been adopted, they cannot be rescinded simply by the stroke of the president’s or administrator’s pen. They can only be replaced through the full process that was required to approve them in the first place, and proposed changes can be overturned by the courts, as was shown repeatedly in the three policy examples discussed in this chapter; several of Pruitt’s initial rule changes also were overturned by the courts, and others are under challenge. Rewriting the EPA rules requires convincing new evidence to justify changing rules that were previously justified. It also is a labor- and science-intensive process, which will be even more challenging if the EPA receives severe cuts to its science budget and its personnel.

Second, EPA Administrator Pruitt’s claim of a return to a “back to basics” form of environmental federalism is misleading. The EPA was founded, and its basic statutes were enacted, to create a stronger federal role in environmental protection, not a weaker one: it would set national minimum standards using science that was beyond the expertise of 50 separate states, and the states would then implement these with technical and financial assistance from the EPA. The EPA also served as a convenient “gorilla in the closet” whom the states could blame when they were compelled to regulate pollution from influential industries. Pruitt’s proposal to reduce or even eliminate the agency’s responsibilities for many environmental issues and leave them to the states, while simultaneously reducing the EPA’s financial support to the states, is a far more radical notion of federalism: it would return many issues not to the period of the EPA’s original mission but to the era before the EPA was created, when many states lacked the resources and the political will to address environmental problems themselves. Some conservative and fossil-fuel-dependent state governments may support such a change, but many other states do not, and will both lobby and sue to prevent it.

Finally, a serious attempt to gut the agency could well rekindle a backlash of public and even business opposition. Environmental protection often is not a major issue in elections, but frequently becomes one in the face of any serious threat to it. Congress routinely rewrites every president’s budget proposals, either maintaining (or even increasing) existing funding levels or cutting them even more deeply; and it could, of course, even change the basic statutes that authorize its regulations and other programs. However, the EPA’s mission and many of its programs are still popular with the public, with some influential businesses, and with many members of Congress, including even some Republicans; and even with full Republican support, the current Senate majority is less than would be needed to override a filibuster. Some business interests support radically weakening the EPA’s
regulations, but others benefit from them: they provide a single set of national standards rather than different ones in each state, they protect companies’ reputations and compliance investments against less principled competitors, and they provide predictable requirements consistent with global as well as domestic expectations. And more than a few members of Congress may have second thoughts about defunding federal science research programs, which provide the factual evidence necessary to justify both legislative and administrative decisions. For all these reasons, many of Trump’s proposed cuts may not be approved.

The most likely outcomes, therefore, are that during the Trump administration, the EPA will issue few if any new regulations but will make some attempts to revise and weaken existing ones. It probably will not succeed in actually rescinding many of the existing regulations, but it appears likely to try to undermine them by cutting budgets and staff for enforcement and by taking administrative decisions not to enforce them, though these tactics could be vulnerable to lawsuits and court orders requiring enforcement. One of the most serious long-term dangers is probably the attempt to radically defund the scientific research activities that are needed to understand the problems the agency is charged with addressing. A particular danger, for instance, is the attempt to eliminate nearly every trace of federal capacity to address climate change, including not simply the EPA’s regulations but also climate science research, mitigation, and adaptation capacities throughout the federal agencies. These changes, if successful, could do serious damage to both America’s and the world’s understanding of important environmental forces and trends, and significantly hinder our ability to respond to them.

Rays of Hope

Despite attacks by some businesses and other critics, the basic frameworks and scientific foundations of the EPA’s decisions remain largely intact so far. Even during unsupportive presidencies, the courts have frequently upheld the EPA’s statutory responsibilities to protect the environment and have overruled attempts to reinterpret them in less protective ways. Both environmental advocacy groups and some state governments—and even some supportive businesses—have played key roles in bringing such lawsuits.

There is additional hope in the recent proliferation of state-level policy innovations (see Chapter 2). California and New Jersey led in developing hazardous chemical “right-to-know” laws in the 1980s, which led to the EPA’s nationwide Toxics Release Inventory. More than half the states have passed renewable energy mandates, and twenty-four have passed tax credits for renewable energy. North Carolina passed a Clean Smokestacks Act in 2001, a state-level cap-and-trade requirement that forced its electric utilities to clean up or close down old coal-fired power plants that had been “grandfathered” under federal law. The act reduced sulfur emissions by more than
80 percent. More recently, California and a coalition of northeastern states (the Regional Greenhouse Gas Initiative, or RGGI) are now becoming leading voices in climate-change policy both within the United States and in cooperation with other countries, with California in particular passing strong policies to reduce GHG emissions and promote energy efficiency and renewable energy (see Chapters 2 and 13). Other states have also moved aggressively to promote renewable energy, including even “deep red” states such as Texas and Iowa. At the same time, however, polluting industries and wealthy individuals opposed to regulation have begun pouring money into state election campaigns, as well as national ones, and proposing “model” state legislation to try to block strong environmental policy initiatives at the state level as well.

There is also hope in coalitions between environmental advocacy groups and businesses that would prosper in a greener economy. Many leading businesses have identified ways in which good environmental management can be good business and, in cooperation with some environmental organizations, are positioning themselves to prosper in a more environmentally sustainable economy (see Chapter 11). Market forces favoring greener outcomes, such as the rapidly decreasing prices of natural gas and solar and wind energy and global expectations demanding mitigation of climate change, also have become important drivers of business decisions, and these influences will continue whether or not Trump’s deregulation agenda succeeds. But the EPA’s regulations remain an important motivator for other businesses, many of which are still polluting either because they lack the will to modernize old facilities or because it is inherently more expensive for them to control pollution than to pay for lawyers, lobbyists, and politicians to resist regulation.

The EPA thus remains an essential institution and—so far, at least—an important force within the limits of its authority, resources, and politically unstable leadership. The limits and imperfections of its policy tools are real, but more often than not, they result not from any unwillingness by the EPA to use more effective ones but from the inability of Congress—hamstrung by partisan and ideological gridlock and by the power of entrenched interests—to authorize better alternatives. Any hope of truly fundamental policy improvement must lie with broader political reforms and in broader coalitions of environmental and public health advocates with those businesses and state governments that are supportive of environmental protection.

Suggested Websites

**U.S. Environmental Protection Agency** (www.epa.gov) There are numerous links on this site that provide access to all major activities and issues of concern at the EPA, including environmental laws and regulations.

**U.S. Environmental Protection Agency—EPA History** (www2.epa.gov/aboutepa/epa-history) This section of the EPA site explores the agency’s
history and the significant changes over time in environmental laws and regulations.

**U.S. Environmental Protection Agency New Source Review** (www.epa.gov/nsrc) This part of the EPA site is dedicated to explaining the New Source Review provisions under the Clean Air Act.

**U.S. Environmental Protection Agency Arsenic Rule** (https://www.epa.gov/dwreginfo/drinking-water-arsenic-rule-history) This part of the EPA site explains arsenic regulations under the Safe Drinking Water Act.

**U.S. Environmental Protection Agency Carbon Pollution Standards and Clean Power Plan** (https://19january2017snapshot.epa.gov/cleanpower-plan_.html) This was the major EPA website for developments under the Clean Power Plan and other EPA actions to address carbon pollution under the Obama administration; it was replaced in 2017 by one showing current Trump administration initiatives to revise or rescind these rules (https://www.epa.gov/energy-independence).

Notes


3. For more detail on EPA budgets and staffing, see Chapter 1 and Appendixes 2 and 3.


36. Robert Fabricant (EPA General Counsel), “EPA’s Authority to Impose Mandatory Controls to Address Global Climate Change under the Clean Air Act” (August 29, 2003), cited in Federal Register 68(173): 52922–32 at page 52925.
39. The “timing rule” (also known as the “PSD Triggering Rule”) was issued in 1980; it made any source emitting more than one hundred tons of any regulated air pollutant subject to requirements for an EPA permit for “prevention of significant deterioration” of air quality (PSD). The Supreme Court unanimously reconfirmed the EPA’s authority to regulate GHGs from power plants in American Electric Power Co. v. Connecticut, 564 U.S. 410 (2011).
48. At least one scholar, however, has argued that this conventional wisdom is overstated and often wrong and that “there are solid reasons to suspect that an emissions trading program does a poorer job of stimulating innovation than a comparably designed traditional regulation.” See David Driesen, “Does Emissions Trading Encourage Innovation?” Environmental Law Reporter 33 (2003): 10094–108.

