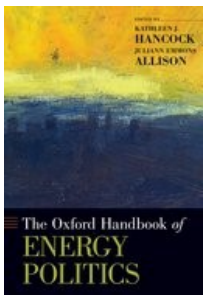

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CHAPTER

17 The Energy Politics of the United States

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Abstract

This chapter examines the development and politics of US energy policy, with an emphasis on three themes: the distribution of authority to regulate energy between national (or federal) and subnational governments, the relationship between energy and environmental policy and regulation, and the role of climate action in energy politics. It reviews patterns of energy production and consumption; provides an overview of national energy politics; and reviews literatures on federalism and energy politics and policy, the increasing integration of energy and environmental policies, and the politics of energy and climate action. The chapter concludes with a discussion of a future research agenda that underscores the significance of political polarization, subnational governance, and technological innovation for understanding US energy policy.

Keywords: climate change, US energy policy, federalism, hydraulic fracturing, intergovernmental relations, local politics, renewable energy

Subject: Comparative Politics, Politics

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On April 10, 2010, the BP *Deepwater Horizon* exploded in the Gulf of Mexico. More than four million barrels of oil flowed out of the Maconda well over eighty-seven days, making it the largest oil spill in US history; globally, it was the second worst spill. The explosion and fire killed eleven crew members and injured an additional seventeen; the oil spill destroyed four square miles of seafloor and more than thirteen hundred miles of coastline, killing tens of thousands of birds and sea animals and causing the region's tourism and fishing industries to collapse (Ebinger 2016; Jarvis 2010). The disaster cost BP over $144.89 billion, including cleanup, government response, property and natural resource damage, economic losses associated with the spill, litigation and settlement costs, and restoration expenses (Lee, Garza-Gomez, and Lee 2018; Smith, Smith, and Ashcroft 2011). The magnitude of the tragedy undermined public faith in offshore drilling for oil and gas; national and regional surveys alike have demonstrated that much of the public negatively viewed BP and the federal government immediately following the spill and for some time afterward (*ABC News/Washington Post* 2010; Bishop 2014; Lilley and Firestone 2013; Mukherjee and Rahman 2016; Rosentiel 2010; Safford, Ulrich, and Hamilton 2012).

The BP *Deepwater Horizon* oil spill highlights persistent weaknesses inherent in US energy politics, despite the country's statutory commitment to secure access to affordable energy resources without unwarranted environmental damage (Energy Policy Act of 2005; Hultman 2010). The fact that many major sources of energy—coal, crude oil, natural gas, biomass, and nuclear—are dangerous to extract and produce contributes to the energy regulation challenge. Offshore drilling for oil and gas, for example, especially in deepwater, depends on a complex drilling system that entails rigs, moorings, pipelines, shoreside processing, and supply lines covering thousands of miles (see Coburn in this volume), with numerous weak
p. 374 points prone to accidents, the worst being explosions ↳ and spills. There have been forty-four major oil spills in US waters since 1969 and three major spills in the Gulf of Mexico (National Oceanic and Atmospheric Administration n.d.). While hurricane damage to oil and gas infrastructure is the leading cause of spills, other causal factors of these accidents are equipment failure, weather, human error, and collisions (Meyers et al. 2018). Corporate safety management and regulatory oversight should diminish these accident risks. Yet analyses of the BP *Deepwater Horizon* explosion and spill by government agencies (Bureau of Safety and Environmental Enforcement 2011; Graham and Reilly 2011; US Chemical Safety and Hazard Investigation Board 2014), energy and environmental researchers (Birkland and Young 2011; Ebinger 2016; Osofsky 2011), and the media (Hoffman 2010) point to the following causes: equipment failure complicated by human error as a result of inadequate government and corporate regulation; poor discharge of responsibility by employees of BP, Transocean Offshore Drilling Inc., and Haliburton; and lack of any emergency planning by involved companies or the US Coast Guard. Ebinger (2016, 1) argues that evidence provided via legal and regulatory proceedings make it "clear that there was gross negligence on the part of BP and its partners who placed short-term profits against technically sound drilling practices" (see also Neill and Morris 2012).

Effectively regulating entities such as BP is complicated by the US decentralized political structure, which makes decisive action at the national level difficult. Even though the United States is one of the world's largest producers and consumers of energy as well as a key innovator in energy technology (Nanda, Younge, and Fleming 2014; see also Tutuncu in this volume), the country's national energy policy is piecemeal, with individual states taking the lead in devising their own energy and climate policies and engaged activists among the public taking the lead in pushing issues of environmental protection to the fore. Politics explains why actors other than the national government have crafted much of contemporary US energy policy. The structure of Congress, combined with the heterogeneity (in terms of ideology, constituent pressure, and economic interest) of districts represented there, makes changing the status quo difficult; hence, national energy policy still bears the imprint of the 1950s–1970s, the period during which it was created (Volden and Wiseman 2014). Individual states are less heterogeneous, making unified action at that level relatively easier. Activists understand disparities between national and state audiences and have demonstrated an ability to bring appropriate awareness to issues concerning them.

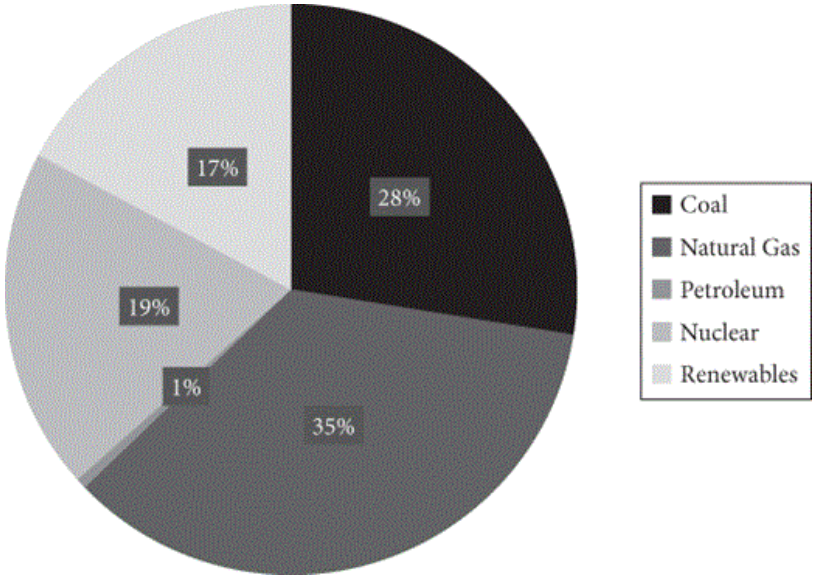
This chapter examines the politics of US energy policy, with an emphasis on three themes: the distribution of authority to regulate energy between national (or federal) and subnational governments, the relationship between energy and environmental policy and regulation, and the role of climate action in energy politics. It begins with an overview of contemporary energy production and consumption in the United States. The chapter then proceeds with a history of national energy politics that includes the role of federalism and the development of environmental policies associated with the nation's transition to renewable energy and unconventional sources of energy. This section suggests that, politically, US national energy policy was a tenuous prospect until the post–World War II rise to power made continuation of modern economic growth
p. 375 a ↳ national priority; the 1970s oil crisis then demonstrated that economic growth could be wiped out by disruptions in energy supply. The success of postwar economic growth and the commitment to fuel it, regardless of ecological impacts, catalyzed opposition from environmentalists and, later, climate activists. This overview is followed by a critical review of the literatures on federalism and energy politics and policy,

the increasing integration of energy and environmental policies, and the effects of climate action on energy policy. The chapter concludes with a discussion of a research agenda to guide scholarship going forward.

Energy Production and Consumption in the United States

Although the geographic distribution of energy production and consumption within its borders is highly uneven, the United States is overall one of the world's largest producers and consumers of energy (Nanda, Younge, and Fleming 2014; see also Tutuncu in this volume). Figure 17.1 summarizes US electricity generation in 2018 by source, including fossil fuels (coal, petroleum from crude oil and natural gas, and natural gas); nuclear; and renewables, consisting of wind, biomass, solar, geothermal, and hydropower. Fossil fuels make up roughly 64 percent of the current mix of energy resources used for electricity generation; nuclear energy contributes about 20 percent of the mix; and renewables, which have received
p. 376 significant attention for their extraordinary growth—67 percent in ↳ the 2010–2016 decade (Center for Climate and Energy Solutions 2016)—make up the remaining 16 percent. As of 2017, the top five producing states overall, including all sources of energy, were Texas, with 17,573 trillion British thermal units (BTUs); Pennsylvania, with 8,168 trillion BTUs; Wyoming, with 7,788 trillion BTUs; West Virginia, with 4,418 trillion BTUs; and Oklahoma, with 4,160 trillion BTUs. The top five consuming states as of 2017 were Texas, at 13,365 trillion BTUs; California, at 7,881 trillion BTUs; Louisiana, at 4,481.8 trillion BTUs; Florida, at 4,208.5 trillion BTUs; and Illinois, at 3,871.5 trillion BTUs (US Energy Information Administration 2017).

Figure 17.1



US electricity production by source, 2018*

* Numbers do not add up to 100 because other sources not included make up the difference in electricity production.

Source: Data from US Energy Information Administration (2018d).

Most US efforts to foster green energy growth are directed at increasing the renewables' share of electricity generation. In this endeavor, some states, by virtue of natural resource endowments, regulatory policymaking choices, or both, have more developed renewables sectors than others. Yet electricity generation in many states continues to feed primarily on fossil fuel resources. Table 17.1, which lists the top five states by energy source used for electricity generation, provides important insights that guide the remainder of this chapter. First, the explicit emphasis on states rather than the nation underscores the decentralized nature of energy policy in the United States. Second, the diversity of sources and states in the

table illustrates the strong local dimension of energy politics in the United States due to the tendency of dominant resource sectors to seek to codify, enhance, and build their advantage through governmental action in their "home" states. And third, as demonstrated by Texas, fossil fuels and renewables can be important sources of revenue and energy within the same state. As Table 17.1 indicates, Texas is the nation's top consumer of natural gas and wind for electricity generation; that state is also the nation's top producer of natural gas and wind power. Thus, conventional (fossil fuels) and emerging (renewables) energy resources are not necessarily in opposition.

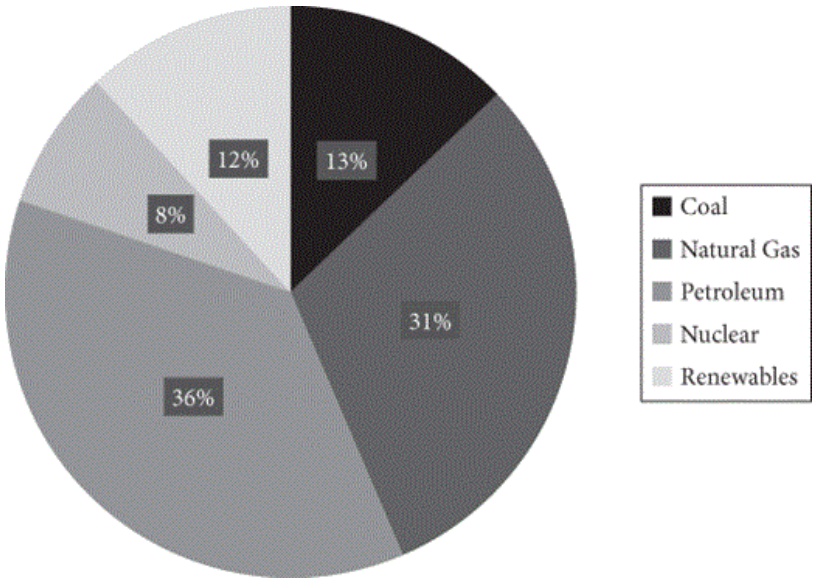
Table 17.1 Top States Based on Energy Source Used for Electricity

Coal	Natural Gas	Nuclear	Biomass	Hydropower	Solar Photovoltaic	Wind
Texas	Texas	Illinois	California	Washington	California	Texas
Indiana	Florida	Pennsylvania	Georgia	California	North Carolina	Oklahoma
West Virginia	Pennsylvania	South Carolina	Florida	Oregon	Arizona	Iowa
Missouri	California	New York	Virginia	New York	Texas	Kansas
Kentucky	Louisiana	Alabama	Alabama	Alabama	Nevada	California

Note: Rankings denote year-to-year changes between 2018 and 2019 (US Energy Information Administration 2019a). Hydropower in this context refers to electricity obtained through conventional hydroelectric generation.

Electricity generation is instructive but does not reflect patterns of energy resource production and consumption in other areas, most notably transportation. Twenty-eight percent of all of the energy used in the United States in 2019 was consumed by transportation (US Energy Information Agency 2019d). Figure 17.2 provides a breakdown of total US energy use as of 2018 by source across the nation's electricity,
p. 377 transportation, and ↳ industrial sectors. The chart reveals that due to its use for transportation, petroleum is the largest energy resource used in the United States. According to the US Energy Information Administration (2018d), 92 percent of the transportation sector is fueled by petroleum. Petroleum is also used widely as a feedstock for industrial processes. Energy resources other than petroleum are used primarily for electricity generation and as industrial feedstocks (US Energy Information Administration 2018b). The resilience of fossil fuels despite the growth of renewables suggests oil and gas resources will continue to play some role in US energy politics even as the nation embraces a decarbonizing future.

Figure 17.2



Total US energy use by source, 2018.

Source: Data from U.S. Energy Information Administration (2018d).

In the context of transitioning to lower-carbon energy sources in the United States, hydraulic fracturing, or "fracking," is arguably the most controversial fossil fuel issue in the United States, where it is currently the primary method of shale oil and gas extraction (Powell 2017; see also Tutuncu in this volume). Fracturing is a complicated and expensive process that involves injecting fluid—water and sand or other proppants suspended by thickening agents—at high pressure into subsurface formations to fracture, or create cracks in, (chiefly shale) rock formations to release oil, natural gas, and brine. Combined with horizontal drilling, which provides greater access to oil and gas reservoirs, fracturing is an effective extraction process whenever market prices for these energy resources are high enough to warrant the associated economic, environmental, and social costs. The rapid rise in oil prices from less than $30/barrel in 2000 to over $90 at the start of the 2008[1] recession provided the ideal conditions for the US shale boom.

Initially scholars as well as energy and environmental policy makers were enthusiastic about the viability of shale gas. The US oil and gas industries arguably "staged a remarkable recovery" as a consequence of fracturing and were positioned to increase self-sufficiency, reverse the nation's trade deficit, and revive industries (Dunn and McClelland 2013, 1411). Others heralded fracturing because the carbon dioxide
p. 378 emissions—a key greenhouse ↳ gas (GHG)—associated with the combustion of natural gas are lower than comparable emissions from gasoline or coal (Burnham et al. 2011; Hayhoe et al. 2002). Some of that eagerness later waned when evidence that natural gas, which consists mostly of methane, is a more potent GHG than carbon dioxide threatened to derail commitments to climate change mitigation strategies at all levels of government. Howarth, Santoro, and Ingraffea's (2011) critical review of natural gas as a "transition fuel" finds that fracturing is less likely to ensure transition from coal to natural gas than it is to increase overall dependence on fossil fuels. Though other scholars are more optimistic about the potential for natural gas to reduce carbon dioxide emissions and some forms of air pollution (Jackson et al. 2014; see Hughes in this volume), fracturing remains strongly tied to the process's role in land degradation, water contamination, and air pollution (Jackson et al. 2014).

The Politics of National Energy Policy in the United States in Retrospect

The US federal structure, as well as the behavior of individuals and groups within it, has impacted the content and nature of energy politics and policy in the nation. For much of the nation's history there was no comprehensive national energy policy. The dominance of individual states, combined with the weakness of executive institutions through the mid-twentieth century, yielded decentralized energy policy that was localized in character (Gailmard and Patty 2013; Kollman and Chibber 2004; Tulis 2017). Prior to the mid-twentieth century, energy policy was local or regional in scope and designed to facilitate the development and transport of dominant energy sources to commercial, industrial, and residential customers demanding power (Gormley 1983). For instance, New York advanced its own hydroelectric interests while Ohio developed a significant coal industry (Rueb 2017; Siegel and Cheung 2016); there was little effort to synchronize New York's interests with Ohio's in the form of national policy (Chubb 1983; Commoner 1979;). Until the 1960s, public engagement with energy policy was similarly limited to "smoke nuisances" and other local issues related to increased reliance on fossil fuels in dense urban areas (Melosi 1980; Morgan 1973; Stradling 2002). While individual victims of air pollution sued perpetrators throughout the first century of US history, the first municipal antismoke ordinances were not passed until the 1880s (in Chicago, Illinois, and Cincinnati, Ohio, both of which were then among the nation's top ten most populous cities); legislation governing counties and states followed in 1913 (Albany County, New York) and 1952 (Oregon), respectively (Stradling and Thorsheim 1999; and Stern 1982).

Three developments converged in the mid-twentieth century to generate the political conditions necessary to develop greater regulation of the electricity and natural gas systems and the oil industry. First, US
p. 379
involvement in two world wars, along with the ↳ construction of a post–World War II American-led alliance system, gave the United States the opportunity to act globally in the pursuit of its energy and, later, environmental goals (DeSombre 2000; Yergin 1990). Second, the development of the "modern presidency" during the Roosevelt administration, the modern bureaucracy, and the modern party system strengthened national executive power and facilitated presidential and congressional coordination in articulating a national energy policy (Aldrich 2011; Chick 2007; Neustadt 1980). A president with ample staff at his or her disposal can deal with Congress from a position of equality rather than subservience and can direct a national bureaucracy to create a centralized energy policy (Neustadt 1980). These institutional innovations, including frequent use of executive orders (Lisowski 2002; Olson 1984; Shanley 1983), also spurred the development of air and water quality policy in response to activists opposed to "unchecked pollution" associated with fossil fuel extraction and combustion (Childs 2011; DeSombre 2000; Dunlap and Mertig 2014; Scheraga 1994). And third, industrialization and the rise of a predominantly urban population necessitated greater coordination with respect to the procurement, generation, and distribution of energy (Cherp and Jewell 2011; Hughes and Lipscy 2013), including preparing for and responding to environmental externalities and emergencies associated with energy generation and use (Hays 1987).

In the aftermath of World War II and for much of the nearly three-decade Western economic boom that followed it, the US government's principal energy goal consisted of finding and securing petroleum deposits for itself and its allies (Crafts and Toniolo 2012; Hughes and Lipscy 2013). Continued close US involvement with Aramco and the Saudi Arabian government (Bronson 2008) and cordial relationships with Iran during the Pahlavi regime (Castiglioni 2015) and with Venezuela prior to Hugo Chavez's rule (Miller 2016; see Rosales and Sánchez in this volume) were predicated on the desire not only to secure oil deposits in these countries but also to prevent the Soviet Union and its allies from accessing these deposits. From the 1940s to the 1970s, the US goal of securing unfettered access to oil had bipartisan support due to the centrality of oil to the transportation sector and manufacturing processes (OPEC Secretariat 2015); electoral fears of Democrats regarding accusations of being weak concerning national security (Daalder and Lindsay 2005);

and the possibility that the salience of the civil rights movement deflected attention from energy issues (Ellis 2013). Research on how presidents balance managerial roles with desires for legislative success suggests that with rare exceptions—for example, President Barack Obama regarding the Clean Power Plan—presidents did not use their visibility to move away from an energy policy designed to ensure access to fossil fuels (Beckmann 2010). Studies of bureaucratic freedom to maintain policy stability (see Gailmard and Patty 2013) indicate that regulators have little autonomy and act according to the dictates of their executive and legislative bosses.

The event that upended American foreign policy concerning oil was the 1973 oil embargo by the Organization of the Petroleum Exporting Countries (OPEC), which increased the price of oil dramatically. President Richard Nixon responded by creating the Federal Energy Office, an organization that coordinated
p. 380 the US response to the embargo; it was succeeded by the Federal Energy Administration (FEA) in 1974 ↳ (Anders 1980). The FEA's charge included maintaining quotas and price controls on oil and associated derivatives and gathering data on energy sources and energy production and consumption patterns to reduce dependence on foreign petroleum. Greater federal regulation of energy in response to the oil crisis included congressional involvement. The passage of the Energy Reorganization Act in 1974 fostered the development of the Nuclear Regulatory Commission, along with increased investment in energy research. In addition, the passage of the Energy Policy and Conservation Act of 1975 established the Strategic Petroleum Reserve (up to 727 billion gallons), the Energy Conservation Program for Consumer Products, and Corporate Average Fuel Economy (CAFE) standards, which are levied on new vehicles according to class of vehicle (Knittel 2011). Finally, the passage of the Department of Energy Organization Act in 1977 subsumed the FEA within the Department of Energy (DOE), which administers energy regulation and research efforts under the supervision of the president and Congress. The same act retained the Federal Power Commission (FPC), which had licensed power plants and electricity transmission since 1920 and natural gas facilities and pipelines since 1935, in the new Federal Energy Regulatory Commission (FERC). FERC regulates public utility transmission and sales for resale in interstate commerce, leaving decisions about supplying energy to users up to individual states.

The extension of federal regulation of energy production and usage coincided with the rise of popular protest against "the relentless degradation" of the US natural environments (Rothman 2017). Reliance on fossil fuels contributed to New York City's killer smog events during the 1950s and 1960s and a well blowout off California's coast in 1969 that spilled over 400,000 gallons of oil, in addition to many of the more than 100,000 deaths due to air pollution each year through 1990 (Zhang et al. 2018). President Richard Nixon responded to these crises by establishing the Environmental Protection Agency (EPA) in 1970. The EPA is responsible for environmental assessment—completing environmental impact statements (EIS) in the context of specific projects and/or strategic environmental assessments (SEA) in the case of state policies, plans, and programs—research, and education, as well as the administration of national statutes in consultation with state and tribal governments. While the DOE and FERC seek "to keep energy prices low and supplies ample" (Freeman 2017, 341), the EPA and environmental regulatory agencies focus on reducing and mitigating the adverse consequences of securing stable supplies of affordable energy. Despite claims that environmental agencies fail to consider the effects of regulation on energy markets and costs and electrical system reliability, and that energy regulators do not consider the impacts of their regulatory choices on public health and the natural environment, "environmental law increasingly has become a driver of energy policy, and energy regulation has begun to seriously address environmental concerns" (Freeman 2017, 340).

The federal government's movement in the 1970s toward increased regulation of energy resources in response to the oil crisis represented a new status quo. Prior to the crisis, political debate concerned whether the federal government should regulate energy procurement, production, and consumption at all, except for securing petroleum and maintaining the safety of workers. Debate following the crisis shifted to

p. 381 how vigorous ↳ federal regulation must be to ensure energy security and sustainability, including environmental and socioeconomic concerns (Kuhlman and Farrington 2010; McCollum, Krey, and Riahi 2011). Politics concerning the federal government's role with regard to increasing domestic oil and gas production or adopting carbon emissions limits has occurred in the context of this post–oil crisis perspective on regulation.

The flurry of energy, and environmental, regulatory activity that characterized the 1970s was followed by a lull until passage of the 1992 Energy Policy Act, which stimulated competition in electricity generation, paving the way for the current period of deregulation (Watkiss and Smith 1993; see Hoika and MacArthur in this volume). Lower energy costs, which may be attributable to deregulation (Milstein and Tishler 2011; Pollitt 2012; Razeghi, Shaffer, and Samuelsen 2017), buttressed conservative opposition to incentivizing energy efficiency and/or less polluting fuel sources, despite growing concern about climate change evidenced by the 1992 Earth Summit in Rio de Janeiro. A decade later, "rising energy prices … shaped by competing concerns about energy security, environmental quality, and economic growth" (VandeHei and Blum 2005, 1) prompted passage of the 2005 Energy Policy Act. Although this legislation required the addition of renewable fuels to gasoline sold in the United States, it increased reliance on fossil fuels by incentivizing oil and gas extraction on public lands and fossil fuel production. President George W. Bush claimed the act would prove to be "a vital step toward a more secure and more prosperous nation that is less dependent on foreign sources of energy" (VandeHei and Blum 2005). Opponents argued that it "continues to subsidize the well-established oil and gas industries that really don't need subsidizing" (Roberts 2005, 1).

The years since the 2005 Energy Policy Act was enacted have witnessed an extraordinary rise in political polarization between American liberals and conservatives—elites as well as the mass public—worsened by an "echo chamber" in terms of media consumption (Flaxman, Goel, and Rao 2016; McCarty, Poole, and Rosenthal 2006; Shor and McCarty 2011). Ideological echo chambers have mapped onto energy and environmental issues (Jasny, Waggle, and Fisher 2015). The politics of energy policy in the United States is now divided along party lines. Democrats have advocated regulatory activity to reduce reliance on oil and gas and transition to renewable energy sources, while Republicans have emphasized energy security through increased domestic fossil fuel production and private sector investment in alternative and renewable energy (Brown and Hess 2016; Gromet, Kunreuther, and Larrick 2013; Lyon and Yin 2010). This discord is central to the politics of climate change attributable to increased levels of atmospheric carbon dioxide released during fossil fuel use (Cook et al. 2013). The United States is one of the world's largest emitters of carbon (World Bank 2019) and stands to experience more severe weather events, diminished agricultural productivity, and reduced quality of life (Goudie 2019). Liberals favor stronger federal regulation to reduce carbon dioxide and other GHG emissions to mitigate the effects of a changing climate. Conservatives generally begrudge policies intended to curb GHG emissions, insofar as they might impinge on the economic and political benefits that have long accrued to the fossil fuel industries. This conservative-liberal divide has influenced current national-level debates about energy, which we examine in greater detail in the next section.

p. 382

National Policy Debates on Energy, the Environment, and the Climate

The overwhelming majority of research on climate change indicates that average global temperatures are rising as a consequence of increased GHG emissions and that the sharp upward trend since the Industrial Revolution is due to human activity, especially that resulting from fossil fuel combustion, deforestation, and changes in land use (Cook et al. 2013). Impacts of our changing climate are evident in the United States, as they are worldwide, and include human health threats; altered agricultural production and food insecurity; disrupted water supplies; and more pressing concerns regarding transportation systems, energy supplies, and ecologies (US Climate Change Research Program 2018). These threats challenge the federal government to act. Specifically, those on the ideological Left have advocated using federal regulation to increase the costs of generating carbon emissions, while those on the ideological Right have exhibited three distinct responses (Dryzek, Norgaard, and Schlosberg 2011; McCright 2008). A small number of conservatives agree with progressives that climate change is anthropogenic and represents a serious public policy challenge. Prior to 2018's extended and devastating wildfire season, their support for climate adaptation policies emphasized tax credits to spur growth in renewables (Hochschild and Hochschild 2018; Siegel 2018). Many others understand that climate change is occurring but do not believe humans are responsible for it or that regulation can undo what they regard to be a natural process (Friedman 2019). The final group of those on the Right are skeptical that climate change is occurring and generally support conventional energy usage without restriction (Bohr 2016).

These distinct ideological responses to contemporary climate science have so far undermined the legislative consensus necessary to develop effective, national policy to reduce carbon dioxide and other GHG emissions. Specifically, economists and other policy analysts consider imposing a carbon tax directly on consumers to be the most effective way to reduce carbon production, because consumers themselves would face direct financial repercussions for the amount of carbon that they emit (Avi-Yonah and Uhlmann 2009; Goulder and Schein 2013; Harrison 2010; International Panel on Climate Change 2019). Yet even left-leaning politicians at the US federal level have largely refrained from advocating a direct carbon tax on consumers for political reasons; politicians fear that making consumers pay directly for the carbon will engender voter anger and hamper their electoral prospects (Harrison 2010; Rabe 2011). Evidence from nations that have enacted carbon taxes suggests that their concerns are well-founded; hence, "carbon pricing has, so far, played only a supporting role in efforts to mitigate global warming" (Plumer and Popavich 2019).

Advocates of increased carbon regulation have similarly been unable to create a nationwide cap and trade system, although such schemes have been effective for California and, at the regional level, in the Northeast and in western North America (Betsill et al. 2006 Union of Concerned Scientists 2018). These systems
p. 383 include increasingly ↳ strict "caps" on GHG emissions and a market in which companies can "trade" emissions allowances. In practice, major polluters buy and sell allowances to produce carbon dioxide emissions; emissions reductions occur over time as the maximum number of tradable allowances is reduced pursuant to policy goals (Elkins and Baker 2001). Scholars consider a cap and trade system to be less effective than a carbon tax (Avi-Yonah and Uhlmann 2009; Goulder and Schein 2013; Stavins 2008). They argue that cap and trade provides an indirect incentive to reduce GHG-producing activities, compared with the direct incentive posed by a carbon tax. Of course, cap and trade participants *could* pass the costs of carbon emissions on to consumers in the form of higher prices but are unlikely to risk losing customers (Schmalensee and Stavins 2015). Though the effects of cap and trade on individuals are low compared to a carbon tax, opposition in Congress from representatives of states whose economies rely on resource extraction and from presidents whose electoral fortunes are dependent on votes from those states has doomed efforts to adopt nationwide emissions trading programs (Stavins 2011).

In the absence of successful legislative efforts to craft a national energy policy that would facilitate climate change adaptation, the executive and judicial branches have emerged as the key federal battlegrounds with

respect to energy and climate policy. During the Barack Obama administration, the Environmental Protection Agency (EPA) used the Supreme Court's ruling in *Massachusetts v. EPA* (2007) to regulate carbon dioxide under the Clean Air Act to devise the Clean Power Plan (CPP) (Bulman-Pozen 2017). The plan established the first ever US limits on carbon emissions from power plants but granted states the opportunity to design local and regional policies to achieve emissions targets by shifting electricity production away from coal toward natural gas and renewables and/or increasing energy efficiency. The CPP aimed to reduce emissions from electricity generation by 32 percent below 2005 levels by 2030. The Obama administration also signed the Paris Agreement, which strengthened the 1992 United Nations Framework Convention on Climate Change (UNFCCC) by committing signatories to work individually and collectively to limit global temperature increase to no more than 2°C.

The problem with executive actions, including those derived from judicial decisions, is that they are entirely reversible. The Supreme Court has no way of enforcing its decisions without cooperation from the president or congressional action that forces presidential compliance with the Court (Rabe 2011). Decisions made by one presidential administration without congressional approval can also be overturned by the next presidential administration (Chiou and Rothenberg 2017). Both the Obama administration's CPP and its commitment to the Paris Agreement were abandoned by the Donald Trump administration that followed, despite the anticipated high environmental and economic costs associated with doing so (Linn, Burtraw, and McCormack 2016; Nong and Siriwardana 2018). This "quashing" (Dunlap, McCright, and Yarosh 2016) of optimism concerning climate action at the federal level supports scholars' and policy makers' continuing expectation that national and international agreements to reduce GHG will aggregate and emulate successful approaches that emerge at lower levels of governance (Cooper 2018; Meckling 2015; Stokes and
p. 384 Warshaw 2017). "It is not participation that ↳ matters, but compliance," according to Cooper (2018, 440). By 2019, nearly two dozen states, representing more than 40 percent of the nation's carbon emissions, had enacted policies capable of ensuring compliance with the aims of the Paris Agreement (Cooper 2018). If fully implemented, these policies, in combination with efforts by cities, businesses, and other organizations invested in climate action, "could come within striking distance of the US Paris Agreement commitment, resulting in emissions that are 17–24 percent below 2005 levels in 2025" (Climate Action Tracker 2019).

State and Regional Energy Politics and Policy in the Twenty-first Century

Absent sufficient, effective national initiatives, the locus of US energy policy had shifted to states by 2001 (see Bryner 2012; Mintrom 2009; Rabe 2011). As dissenting justice Louis D. Brandeis noted in *New State Ice Co. v. Liebmann* (1932), the well-developed US system of federalism allows for individual states to act independently of the national government and adopt policies supported by their respective electorates. The result, when combined with federal inaction on renewable energy development and climate change, is that states—independently and regionally—have responded to pressing energy and environmental challenges by enacting policies designed to reduce carbon dioxide production by spurring growth in renewable—or sustainable, in the case of nuclear (Plumer 2019)—energy (Boehmke and Skinner 2012; Byrne et al. 2007; Bryner 2012; Callander 2011b; Engel 2006; Karch 2007; Rabe 2011; Sovacool 2008). Lutsey and Sperling (2008) argue that the scale and procedural success of these initiatives provide evidence of greater US commitment to climate action than is usually recognized (see Hughes in this volume). By 2019, twenty-four states and Puerto Rico had joined the US Climate Alliance in support of the Paris Agreement. (Climate Action Tracker 2019; Green 2019).

State-level energy policy motivated by climate politics includes legislation to improve efficiency, accelerate the introduction of zero-emission vehicles, finance climate resilience projects, and increase reliance on renewable energy. The most widespread "green energy" policy among these is the renewable portfolio

standard (RPS). An RPS typically requires electric utility companies operating in a state to procure or generate a specified percentage of the electricity sold to consumers from renewable sources (Barbose 2018; Rabe 2004). It is more feasible politically than a carbon tax because electric utility companies are the targets of regulation; in addition, these standards promote the emergence of more electric utility options for consumers. Iowa adopted a prototypical RPS in 1983. Since that time, half of the states have established renewable energy targets. Twenty-nine states, Washington D.C., and three territories—most of which are clustered on the coasts and in the Great Lakes region—have adopted RPS programs; eight states and one
p. 385 territory have set renewable energy goals (National Conference of State Legislatures 2019). By 2018 ↳ these initiatives applied to more than 55 percent of retail electricity sales in the United States (Barbose 2018). Many states, including California and New York, have successfully mandated large renewable energy generation requirements for electric utilities to meet. In 2018 California's legislature accelerated its RPS program to require 60 percent of retail electricity sales to be renewable by 2030 and production of all of the state's electricity to be carbon-free by 2045. As of 2017, all retail electricity sellers were meeting or exceeding the interim 27 percent target; moreover, 36 percent of the electrical power provided by California's three largest investor-owned utilities (IOUs) was renewable, and that percentage was 50 percent among the state's community choice, or municipal, aggregators (California Public Utilities Commission 2019). The National Conference of State Legislatures (NCSL 2019) reports that half the growth in US renewable energy generation since 2000 is due to policies like California's (see also Allison et al. 2016).

Not all states have constructed their RPS programs intending to reduce fossil fuel consumption, though. West Virginia's Alternative and Renewable Energy Portfolio Standard (AREPS) required 25 percent of the energy supplied by large investor-owned utilities to be alternative or renewable energy by 2025; however, the policy included advanced coal technology, coalbed methane, natural gas, fuel from coal gasification or liquefaction, synthetic gas, integrated gasification combined-cycle technologies, waste coal, and tire-derived fuel among the "alternative or renewable" options. AREPS was repealed in 2015, affirming West Virginia's desire to rely on a "coal-powered economy" (Small 2015; Parinandi 2020). Similarly, Ohio's RPS —passed by a Democratic governor and a majority Republican legislature in 2008—established a 12.5 percent renewable energy goal by 2026 but was "frozen" for two years beginning in 2014 due to opposition by coal companies, utilities, think tanks, nonprofit foundations, and political action committees (Beirne 2015; Weiner and Hasemyer 2017). Currently, 5 percent of Ohio's energy is produced from renewables, and commitment to the state's RPS remains a dubious prospect (Small 2015; US Energy Information Administration 2019c).

Research on state and other subnational energy politics and policies considers the factors that might cause variation in states' RPS programs. One obvious possibility is that the importance of fossil fuel extraction to a state's economy affects its adoption of RPS programs and willingness to permit fossil fuel sources to be used for RPS requirements. Coal mining has played a significant role in West Virginia's economy since the mid-nineteenth century. Today, West Virginia is the nation's second largest producer of coal, after Wyoming, and 90 percent of the state's electricity comes from coal (US Energy Information Administration 2018a). Yet research suggests that while state affluence and regional economic competition are important, the relationship between the economic importance of fossil fuel and support for RPS programs is not so simple (Chandler 2009; Dincer, Payne, and Simkins 2014; Fredriksson and Millimet 2002a; Matisoff, 2008; Matisoff and Edwards 2014). Rather, research conducted in the 2010s supports Rabe's (2006) claim that state RPS programs are mostly "home grown." Carley and Miller's (2012) cogent review suggests that while state RPS programs vary in stringency—measured in terms of requisite share of the electrical load and rate
p. 386 of change in renewable generation over time—there are commonalities. Early work indicates that politics, ↳ especially "partisanship and political culture" (Fowler and Breen 2013), best accounts for states' RPS adoptions and variations among their specific requirements (Huang et al. 2007; Lyon and Yin 2010; Matisoff 2008; Matisoff and Edwards 2014; Yi and Feiok 2012). Dincer, Payne, and Simkins (2014) underscore the greater import of citizens' demands and lobbyists' influence rather than regional political-economic

competition, even though RPS programs in the Northeast, Midwest, and West tend to be more stringent than those in the South.

Other research suggests that the geographic pattern of successful state commitments to renewable energy targets and RPS programs explains the variation among states. Voters in some regions may be more willing to sustain the costs of these policies. RPS programs typically impose short-term costs on utility companies, which must upgrade their infrastructure to comply with new, more stringent fuel requirements and emissions standards. Many states allow utility companies to pass some of the costs of upgrading infrastructure on to consumers, meaning rates may rise in the short term. While the costs of compliance and electricity rates vary across states and can be volatile (Borenstein and Bushnell 2015), a recent survey (Stokes and Warshaw 2017) suggests that consumers' support for RPS programs depends on "how a policy is designed and presented" (Stauffer 2017). Stokes and Warshaw's (2017) strongest finding is that consumers are least likely to support their state's RPS if they believe residential energy costs will rise. This result is consistent with related research on public responses to policies and regulatory changes that might increase energy costs (Aklin and Urpelainen 2013; Bang, Hovi, and Sprinz 2012; Besley and Coate 2003; Bushnell et al. 2017). Specifically, energy costs are more salient to voters' choices regarding public utilities commissioners than they are in gubernatorial or legislative elections (Besley and Coate 2003), possibly because whereas commissioners are evaluated on capacity to establish rates equitably and ensure uninterrupted electricity and gas power services, elected officials, including governors and state legislators, are judged more broadly (Aklin and Urpelainen 2013; Bang, Hovi, and Sprinz 2012). Besley and Coate (2003) argue that electricity prices are lower in states where voters select commissioners and expect them to prioritize low cost over environmental protection.

The diversity of states' RPS programs notwithstanding, there have been attempts to synchronize climate change policies at the regional level (Byrne et al. 2007; Lutsey and Sperling 2008). These include the Regional Greenhouse Gas Initiative (RGGI), a cap and trade program that currently commits nine northeastern states to reduce carbon dioxide emissions from power generators; the Western Climate Initiatives (WCI), which includes compatible cap and trade programs for GHG emissions covering California and the Canadian provinces of Ontario and Quebec; and the Pacific Coast Collaborative (PCC) among the northwestern states, provinces, and cities (British Columbia, Washington, Oregon, California, British Columbia, and the cities of Vancouver, Seattle, Portland, San Francisco, Oakland, and Los Angeles), which together constitute the world's fifth largest economy and have committed to increasing resilience to climate change by transforming power grids and transportation systems. The RGGI is the most advanced of these initiatives (Murray and Maniloff 2015; see also Mildenberger and ↳ Stokes in this volume). While states have enforcement authority internally, participation is voluntary (Engel 2006, and states can withdraw freely, as New Jersey did in 2011 pursuant to then governor Chris Christie's executive order (Engel 2006; Ranson and Stavins 2016). The RGGI is also not an effective substitute for national involvement in designing and implementing a cap and trade system; while the compact reduced electricity-related emissions in the Northeast and mid-Atlantic regions, many observers argue that a national solution is necessary to achieve significant reductions in carbon dioxide and other GHG emissions (Bryner 2012; Engel 2006; Sovacool 2008; Weatherholtz 2017; Wallach 2019).

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Contrary to scholars' and policy makers' claims that subnational policies could fulfill national climate action responsibilities (Cooper 2018; Meckling 2015; Stokes and Warshaw 2017), research suggests that states—alone or in regional collaboration—are unlikely to serve as federal energy policy leaders. Ensuring adequate supplies of affordable, if not always increasingly "green," energy remains central to sustaining national security and global economies, whatever their impact on climate change and the natural environment more generally. Moreover, the only well-supported case of state leadership is California, with respect to auto emissions standards (Allison et al. 2016; Fredriksson and Millimet 2002b). The "California effect" (Vogel 1997) refers to the 1970 Clean Air Act Amendment, which includes an exemption for

California to enact lower emissions standards than those required nationwide (Bryner and Hankins 2018). Once adopted, section 177 of the Clean Air Act permitted other states to sign on, and fourteen states had done so as of 2018 (Jervey 2018). The Trump administration's opposition to stringent fuel economy and tailpipe emissions standards represents the first threat to California's air quality authority in nearly fifty years (Mernit 2018). As this chapter goes to press, the Trump administration has announced it will repeal the waiver. Still, revoking California's Clean Air Act waiver would be burdensome for the EPA, which would have to prove in court that the state's "compelling and extraordinary circumstances" with respect to air pollution no longer exist.

RPS programs and regional initiatives, such as the RGGI, illuminate an emerging debate in the literature on US federalism concerning states' strategic adoption of energy or environmental policies to influence federal legislation or rulemaking. Research on this issue suggests that states seeking to protect fossil fuel industries are more likely to preempt federal action than catalyze it (Byrne et al. 2007; Peterson and Rose 2006; Willie 2011). Ohio is one of three states (the others are Michigan and West Virginia) that adopted RPS programs within a year of Obama's election as president. Ohio relied heavily on increasingly costly coal imports, making the state long ripe for a transition to alternatives, including wind and solar (Union of Concerned Scientists 2018). By 2011, conservative political advocacy groups, including Americans for Prosperity and the American Legislative Exchange Council (ALEC), had begun to champion natural gas—an economical source of energy due to developments in hydraulic fracturing and horizontal drilling (see chapters by Coburn, Mildenberger and Stokes, and Tutuncu in this volume)—in opposition to renewables (Fisk 2016; Wiener and Hasemyer 2017). Natural gas production in Ohio was 28 percent higher in 2018 than it was in 2012 (US
p. 388 Energy ↳ Information Administration 2019c). While there is no direct evidence that Ohio's, or any other state's, RPS or fracturing regulations impacted the CPP promulgated by the Obama administration, that plan did support greater reliance on natural gas as part of a larger decarbonization strategy that also supports the growth of renewable energy sources (Bushnell et al. 2017; Davis, Bollinger, and Dijkema 2016; Peters and Hertel 2017).

Local Energy Politics in the United States

The persistence of state and regional energy politics underscores Rabe's (2011) claim that climate change, the central context for energy, and environmental, policymaking, is "far more complex than originally anticipated" and requires an "intergovernmental lens to understand the factors that foster and deter policy formation at multiple governmental levels as well as the interactive dynamics across them" (495). That lens increasingly must incorporate local energy politics. Metropolitan areas are major sources of GHG emissions, and those who live there suffer most from the pollution, extreme weather, and harm to natural environments associated with climate change (Kammen and Sunter 2016; International Panel on Climate Change 2018). Despite the logic of collective action (Olson 2009), which would obviate municipal action in favor of free riding on the efforts of state and federal governments, many cities—individually and collectively—have developed GHG emissions reporting programs, committed to regional RPS programs, and created their own climate action plans in addition to participating in state-level plans.

Much of this undertaking occurs under the auspices of Local Governments for Sustainability, a global network of local and regional governments committed to urban sustainability, or the US Mayors' Climate Protection Agreement (MCPA), signed by over one thousand US mayors pledged to reduce their carbon dioxide emissions to below 1990 levels (United States Conference of Mayors 2019). Though these commitments are not binding, they accurately reflect US cities' authority over climate and energy policy, including electrical power production and transportation (Krause 2011). By 2019, six—Aspen, Colorado; Burlington, Vermont; Georgetown, Texas; Greensburg, Kansas; Kodiak Island, Alaska; and Rockport, Missouri—of the ninety-nine cities committed to 100 percent renewable energy had achieved the goal of

reducing emissions below 1990 levels (Kaldjian and Barua 2019). These cities are small, with populations ranging from 977 (Greensburg) to 49,562 (Georgetown); middle class (incomes range from $38,571 in Greensburg to $64,594 in Aspen); and sustained by industries that do not rely on fossil fuels.

Academic scholarship is circumspect regarding subnational energy initiatives. Krause's review (2011) of intergovernmental relations and climate action suggests that municipal "best practices" (see Betsill and Bulkeley 2006; Bulkeley 2013) emphasize local co-benefits of renewable energy and related climate policies;
p. 389 elevate local leaders; and focus on less ↳ costly "low hanging fruit," which might include incentives for car- and/or ride-sharing or energy conservation. While energy conservation represents a long-standing strategy for modifying and reducing energy demand, neither popular nor scholarly research to date suggests car-sharing (e.g., Zipcar, auto rental, or Lyft) or ride-sharing (e.g., Uber Pool, cabs, and employer van pools) necessarily reduces energy demands or GHG emissions (see Bliss 2018; Jung and Koo 2018). The few studies that seek to explain cities' motivations to advance these strategies do not support the municipal vulnerability narrative (Krause 2011; Zahran, Brody, et al. 2008). Rather, cities with high levels of human capital in demographic terms—for example, income, education, left partisanship, and environmental action—are more likely to participate in climate action networks and enact energy and transportation policies to reduce GHG emissions (Krause 2011; Zahran, Brody, et al. 2008; Zahran, Grover, et al. 2008). In contrast to the literature on states, cities that are more dependent on manufacturing and other industries associated with high levels of GHG emissions are less likely to encourage transitions to renewables or other, cleaner fuel sources (Krause 2011; Zahran, Grover, et al. 2008). Also contrary to research on state energy initiatives, clean—that is, efficient and/or low carbon—energy commitments do diffuse among cities (Krause 2011), more so in states with RPS programs (Yin and Powers 2010).

State politics and local politics also differ in their relationships to national energy policy. Historically, cities followed states, which adopted positions on water and the natural environment (e.g., Crowder et al. 2006), public hazards (e.g., Schneider 1992), and energy and climate change (e.g., Bulkeley 2013; Bulkeley and Betsill 2013, Byrne et al. 2007), reflecting an amalgam of municipal concerns and positions on these issues (Bulkeley 2013; Bulkeley and Betsill 2013; Wright, Weber-Burdin, and Rossi 2013). That calculus is different today, due to the obvious and imminent threat of climate change for communities (Bulkeley 2013; Bulkeley and Betsill 2013). Bulkeley and Betsill (2013) argue that local governments have become "fundamental" to restructuring intergovernmental relations around "carbon control." Cities do continue to support state initiatives in some cases; San Francisco, New York, and Miami have rallied behind state clean energy initiatives. San Francisco is notably one of ten California municipalities that recently committed to 100 percent renewable energy, following the state's enactment of legislation mandating that all of the state's electricity come from clean power sources, by 2045—one of only two states (the other is Hawaii) to do so (Daly 2018). Because transportation is the greatest source of GHG emissions in California, local support for the state's decision to continue strengthening auto emissions standards annually, with the support of major automakers (Ford, Volkswagen, BMW, and Honda as of summer 2019), is significant (Chavez 2019; State of California 2019).

Cities increasingly also oppose state positions with respect to the policy direction taken by the federal government. Municipal opposition to the "localized costs" of "fracking" is a case in point (Fisk 2016). The 2005 Energy Policy Act effectively divorced the federal government from regulation of fracturing by exempting "underground injection" from meeting the requirements of the Safe Drinking Water Act (Energy
p. 390 Policy Act 2005, 102). This maneuver altered the balance of regulatory power over ↳ nonconventional sources of energy in favor of state and local governments and created a disconnect between fossil fuel advocates championing potential state "venues" of operation and environmentalists seeking greater federal regulation (Davis 2014; Davis and Hoffer, 2012). As a result, environmentalists have allied with residents in communities opposed to the noise, migrant gas workers, water pollution, and earthquakes associated with nearby fracturing operations. In Youngstown, Ohio, a drastic increase in seismic activity is linked to

wastewater disposal from fracturing, and the combined wastewater-earthquake crisis has allowed for the formation of common cause between residents and environmental groups (Fischetti 2012).

This situation has created dilemmas for state and local governments seeking to increase economic growth and local investment provided by gas companies, while also hoping to assuage increasingly hostile constituents upset over the social and environmental costs related to fracturing. Research (Goho 2012; Warner and Shapiro 2013) suggests that energy and environmental regulators at the state level tend to endorse jobs and develop rules ensuring a fair and predictable environment for gas companies. Local responses have ranged from cooperating with gas companies to ensure environmental protection without jeopardizing job growth, to regulating where fracturing can occur without undue harm to residents and natural environments, to outright confrontation—moratoria and bans (Fisk 2016). Although a city's response choice depends on its experiences with oil and gas extraction, Fisk's (2016) examination of municipal defiance in Colorado, Ohio, and Texas—three of the US shale gas flashpoints—suggests that better-resourced, more autonomous cities are more likely to strengthen "environmental" regulation at the expense of expanding energy production (Davis 2012, 2014; Davis and Fisk 2014a, 2014b). Still, "states win" due to preemption clauses in state oil and gas statutes, according to Davis (2017), except when state constitutional provisions elevate environmental concerns over other issues, as in New York and Pennsylvania (Davis 2014, 2017; Rabe 2014).

An Agenda for Future Research

The research discussed in this chapter explains the development of energy policy in the United States in terms of a complex, intergovernmental distribution of regulatory authority; the increasing integration of energy and environmental policies; and the politics of state local action to reduce air and water pollution and respond to climate change challenges. This history and review of research suggests fruitful avenues for future research on federalism and energy politics in a changing climate and an "energy democracy" that integrates "radical" federalism with the decarbonization of energy.

Federalism and Energy Politics in a Changing Climate

Current research and politics (see Pew Research Center 2017) support the prioritization of transitioning to
p. 391 renewable energy sources to improve water and air quality but remain ↳ ideologically divided over how to do so. Those on the political Right champion the lower carbon footprint of natural gas and believe market forces are sufficient to limit pollution. The political Left expects that increasing the production and use of even the cleanest fossil fuel (natural gas) will delay the transition to renewables and trusts government regulation, rather than markets, to reduce pollution associated with fossil fuel combustion. The Left's opposition to expanded reliance on fossil fuels is so strong that a majority, including Green New Deal champions, would support nuclear power as well as renewable sources (Meyers et al. 2018; Roberts 2019).[2] So would most conservatives (Roberts 2019). Zero emissions nuclear power is a climate action star, but it is more expensive to produce than solar or natural gas; hence, as of 2018, while ninety-nine commercial nuclear reactors remained in operation, fourteen were scheduled for shutdown by 2025 (Abdulla 2018), and no US state is moving forward with building new nuclear power plants (Fitzwater, Tidwell, and Schneider 2015).

This situation raises a number of questions to motivate future research. What are the likely economic, social, and environmental implications of relaxing regulations on coal production? How would any changes in the balance among the nation's use of fossil fuels, renewables, and even nuclear power impact future energy politics? While zero-sum framing of fossil fuels and renewables can make political compromise on a future energy strategy difficult, Kumar, Fujii, and Managi (2015) are among those who demonstrate that

fossil fuels and renewables are often complementary sources in key industries, such as food and pulp. Scholars might interrogate the bases for either (fossil fuels) or (renewables) thinking and explore the ways in which new technologies enable the use of renewable energy sources and processes to mitigate carbon production. The use of geothermal energy to support carbon sequestration is one such possibility (Rahmouni et al 2014; Randolph and Saar 2011).

Thinking more politically than technically, how might the US withdrawal from its international commitments to lower GHG impact, or be impacted by, its (local, state, and) federal energy and environmental policies? Could broad-based support for nuclear energy, despite associated safety risks, reverse its ongoing decline (Abdulla 2018)? Can the political polarization around energy policy and environmental regulation be reduced in this or some other way to at least the point of bipartisan support for climate action reached in 2008 (Jaffe 2017)? If not, is there a path toward leveraging the efforts of state and local governments to rely more on renewable sources of energy and regulate environmental quality more stringently (Guy et al. 2014)? Can the California effect provide not only lessons (Allison et al. 2016) but also leadership (see Bulkeley and Schroeder 2012; Engel 2006; Fredriksson and Millimet 2002a, 2002b)?

Answers to these questions bear heavily on global efforts to implement market-based polices, such as carbon taxes or cap and trade systems to reduce carbon dioxide emissions (see Hughes in this volume). Whether the US federal government takes decisive action, as some analysts argue will be necessary (see Weatherholtz 2017), or "follows" states and/or local governments (Engel 2006; Sovacool 2008) may depend on what voters believe it will "cost" them directly. Stigler (1971) argues that organized special interests—for example, the fossil fuel sector—pay closer attention to regulatory issues than the public does and are
p. 392 better able to influence policy makers; Parinandi and Hitt's ↳ (2018) critique shows that elected officials side with ordinary voters instead if they expect electoral "punishment" for endorsing organized interests and higher costs. Another fruitful direction for future researchers would be to examine how to sustain voters' attention on the virtues of renewable energy as a means of incentivizing politicians to respond to voters rather than organized interests.

Energy Democracy

Considering the significant role of subnational governments and politics in the development and implementation of energy policy and related environmental regulations, a wide-open area for future research is energy democracy. Energy democracy is a social movement for renewable energy transitions that embodies resistance to fossil-fuel extraction, the fossil fuel industry, and the governments and politicians that endorse dependence on hydrocarbons for energy and advocates for democratically restructured energy regimes. It refers to both "the *normative goal* of decarbonization and energy transformation, and existing *examples* of decentralized and mostly bottom-up civic energy initiatives" (Szulecki 2018, 23). Given public support for renewable energy and the activity of (state and) local governments on the energy and environment front, energy democracy offers a means for reconceptualizing and advancing energy politics in the United States (see Burke and Stephens 2017). Meng (2018) argues that contemporary conflicts around fracturing embody the essence of energy democracy. Specifically, achieving energy justice in this context requires attending to the expected benefits—local as well as national—and the personal and environmental costs of unconventional fossil fuels *and* engaging all relevant stakeholders.

Most research concerning such radical democratic politics around energy issues focuses on disenfranchised communities outside of the United States; however, studies of local resistance associated with the siting of polluting industries offer many relevant examples of homegrown, bottom-up politics (Pellow and Brulle 2005; see also Szulecki 2018). Furthermore, in addition to Meng (2014, 2018), Canfield, Klima, and Dawson's (2015) study of deliberative democracy and energy policy in Pittsburgh, Pennsylvania, which explores the role of knowledge in shaping public perceptions and opinions on climate change and adaptive

energy policies, represents the kind of detailed research required to understand the ideological foundations for contemporary energy politics on a warming planet. An energy democracy framework might prove particularly useful for studying local renewable energy transitions, such as those under way in California. San Diego County's Regional Comprehensive Plan, for example, is supported by the Fourteenth Amendment (US Const. amend. XIV) and President Clinton's Executive Order on Environmental Justice (Clinton 1994), as well as California legislation, including SB 115 (1999), the first state-level statute on EJ, and SB 375 (2006), which requires a bottom-up approach to regional planning to achieve the state's targets for reducing GHG emissions.

A more provocative venue for studying the potential for energy democracy would be communities that have
p. 393 historically depended on coal production. The idea of reviving ↳ the US coal industry is popular in the nation's coal-mining regions, despite the social injustices associated with coal mining and combustion—for example, environmental degradation and health risks, including respiratory disease and cancer (Morrice and Colagiuriits 2013)—and poor chances of long-term success (Carley, Evans, and Konisky 2018). The decline of the US coal industry invites research on what members of these communities understand about available energy resources, climate change, and the mining industry's capacity to influence their social and economic prospects. How do these communities seek to balance attachment to place with the desire for better health and social welfare prospects? What means are available for them to mobilize and empower themselves to manage the local impacts of ongoing decarbonization? How might they guide the transition from coal to cleaner energy sources and also improve their economic situations, mental and physical health outcomes, and social welfare (Linn and McCormack 2019)?

Notes

1. InflationData.com, with data provided by Plains All American pipeline (https://inflationdata.com/articles/inflation-adjusted-prices/historical-crude-oil-prices-table/).

2. Some scholars and policy makers argue that nuclear energy is a renewable energy source, though most contend nuclear energy cannot be considered renewable. Nuclear reactors do not produce air pollution or carbon dioxide while operating; however, the processes for mining and refining uranium ore and making reactor fuel all require large amounts of energy. In addition, nuclear power plants are constructed out of metal and concrete, which require additional energy to manufacture. "If fossil fuels are used for mining and refining uranium ore, or if fossil fuels are used when constructing the nuclear power plant, then the emissions from burning those fuels could be associated with the electricity that nuclear power plants generate" (US Energy Information Administration 2019b).

References

ABC News/Washington Post. 2010. "Spill Response Rated Worse Than Katrina; Most Favor Pursuit of Criminal Charges." June 7. http://abcnews.go.com/images/PollingUnit/1110a1%20Oil%20Spill.
WorldCat

Abdulla, Ahmed. 2018. "The Demise of U.S. Nuclear in 4 Charts." *The Conversation*, August 1. https://theconversation.com/the-demise-of-us-nuclear-power-in-4-charts-98817.
WorldCat

Aklin, Michaël, and Johannes Urpelainen. 2013. "Political Competition, Path Dependence, and the Strategy of Sustainable Energy Transitions." *American Journal of Political Science* 57, no. 3: 643–658.
Google Scholar WorldCat

Aldrich, John. 2011. *Why Parties? A Second Look*. Chicago: University of Chicago Press.
Google Scholar Google Preview WorldCat COPAC

Allison, Juliann, Daniel Press, Cara Horowitz, Adam Millard-Ball, and Stephanie Pincetl. 2016. "Paths to Carbon Neutrality: Lessons from California." *Collabra: Psychology* 2, no. 1: 21. doi:10.1525/collabra.66 10.1525/collabra.66
Google Scholar WorldCat Crossref

Anders, Roger. 1980. "*The Federal Energy Administration.*" United States Department of Energy Brief.
Google Scholar Google Preview WorldCat COPAC

p. 394 Avi-Yonah, Reuven S., and David M. Uhlmann. 2009. "Combating Global Climate Change: Why a Carbon Tax Is a Better Response to Global Warming Than Cap and Trade." *Stanford Environmental Law Journal* 28: 3.
Google Scholar WorldCat

Bang, Guri, Jon Hovi, and Detlef F. Sprinz. 2012. "US Presidents and the Failure to Ratify Multilateral Environmental Agreements." *Climate Policy* 12, no. 6: 755–763.
Google Scholar WorldCat

Barbose, Galen. 2018. "*U.S. Renewables Portfolio Standards: 2018.*" Annual Status Report, November 28. Lawrence Berkeley National Laboratory.
Google Scholar Google Preview WorldCat COPAC

Beckmann, Matthew. 2010. *Pushing the Agenda: Presidential Leadership in U.S. Lawmaking, 1953–2004*. New York: Cambridge University Press.
Google Scholar Google Preview WorldCat COPAC

Beirne, Samuel. 2015. "West Virginia Sticks with Coal Despite Trends in Favor of Cleaner Energy." Available at https://www.eesi.org/articles/view/west-virginia-sticks-with-coal-despite-trends-in-favor-of-cleaner-energy.
WorldCat

Besley, Timothy, and Stephen Coate. 2003. "Elected Versus Appointed Regulators: Theory and Evidence." *Journal of the European Economic Association* 1, no. 5: 1176–1206.
Google Scholar WorldCat

Betsill, Michelle M., and Harriet Bulkeley. 2006. "Cities and the Multilevel Governance of Global Climate Change." *Global Governance* 12: 141.
Google Scholar WorldCat

Birkland, Thomas A., and Sarah E. DeYoung. 2011. "Emergency Response, Doctrinal Confusion, and Federalism in the Deepwater Horizon Oil Spill." *Publius: The Journal of Federalism* 41, no. 3: 471–493.

Google Scholar WorldCat

Bishop, Bradford. H. 2014. “Focusing Events and Public Opinion: Evidence from the Deepwater Horizon Disaster.” *Political Behavior* 36, no. 1: 1–22.
Google Scholar WorldCat

Bliss, Laura. 2018. “Uber and Lyft Could Do a Lot More for the Planet.” *Citylab*, April 30.
Google Scholar WorldCat

Boehmke, Frederick, and Paul Skinner. 2012. “State Policy Innovativeness Revisited.” State *Politics and Policy Quarterly* 12, no. 3: 303–329.

Bohr, Jeremiah. 2016. “The ‘Climatism’ Cartel: Why Climate Change Deniers Oppose Market-Based Mitigation Policy.” *Environmental Politics* 25, no. 5: 812–830.
Google Scholar WorldCat

Borenstein, Severin, and James Bushnell. 2015. “The US Electricity Industry after 20 Years of Restructuring.” *Annal Review of Economics* 7, no. 1: 437–463.
Google Scholar WorldCat

Bronson, Rachel. 2008. *Thicker Than Oil: America’s Uneasy Partnership with Saudi Arabia*. New York: Oxford University Press.
Google Scholar Google Preview WorldCat COPAC

Brown, Kate, and David Hess. 2016. “Pathways to Policy: Partisanship and Bipartisanship in Renewable Energy Legislation.” *Environmental Politics* 25, no. 6: 971–990.
Google Scholar WorldCat

Bryner, Gary. 2012. *Integrating Climate, Energy, and Air Pollution Policies*. Cambridge, MA: MIT Press.
Google Scholar Google Preview WorldCat COPAC

Bryner, Nicholas, and Meredith Hankins. 2018. “Why California Gets to Write Its Own Auto Emissions Standards: 5 Questions Answered.” *The Conversation*, April 6. https://theconversation.com/why-california-gets-to-write-its-own-auto-emissions-standards-5-questions-answered-94379.
WorldCat

Bulkeley, Harriet. 2013. *Cities and Climate Change*. New York, NY: Routledge.
Google Scholar Google Preview WorldCat COPAC

Bulkeley, Harriet, and Michelle M. Betsill. 2013. “Revisiting the Urban Politics of Climate Change.” *Environmental Politics* 22, no. 1: 136–154.
Google Scholar WorldCat

Bulkeley, Harriet, and Heike Schroeder. 2012. “Beyond State/Non-State Divides: Global Cities and the Governing of Climate Change.” *European Journal of International Relations* 18, no. 4: 743–766.

Bulman-Pozen, Jessica. 2017. “Federalism All the Way up: State Standing and the New Process Federalism.” *California Law Review* 105: 1739.
Google Scholar WorldCat

Bureau of Safety and Environmental Enforcement. 2011. “Deepwater Horizon Joint Investigative Team Report.” Volumes I and II. Available at https://www.bsee.gov/newsroom/library/deepwater-horizon-reading-room/joint-investigation-team-report.
WorldCat

Burke, Matthew J., and Jennie C. Stephens. 2017. “Energy Democracy: Goals and Policy Instruments for Sociotechnical Transitions.” *Energy Research & Social Science* 33: 35–48.
Google Scholar WorldCat

Burnham, Andrew, Jeongwoo Han, Corrie E. Clark, Michael Wang, Jennifer Dunn, and Ignasi Palou-Rivera. 2011. “Life-Cycle Greenhouse Gas Emissions of Shale Gas, Natural Gas, Coal, and Petroleum.” *Environmental Science & Technology* 46, no. 2: 619–627.
Google Scholar WorldCat

Bushnell, James B., Stephen P. Holland, Jonathan E. Hughes, and Christopher R. Knittel. 2017. “Strategic Policy Choice in State-Level Regulation: The EPA’s Clean Power Plan.” *American Economic Journal: Economic Policy* 9, no. 2: 57–90.
Google Scholar WorldCat

Byrne, John, Kristen Hughes, Wilson Rickerson, and Lado Kurdgelashvili. 2007. “American Policy Conflict in the Greenhouse: Divergent Trends in Federal, Regional, State, and Local Green Energy and Climate Change Policy.” *Energy Policy* 35, no. 9: 4555–4573.
Google Scholar WorldCat

Callander, Steven. 2011. “Searching for Good Policies.” *American Political Science Review* 105 (November): 643–662.
WorldCat

California Public Utilities Commission. 2019. “*Renewables Portfolio Standard Program.*” Available at https://www.cpuc.ca.gov/renewables/.
Google Scholar Google Preview WorldCat COPAC

Canfield, Casey, Kelly Klima, and Tim Dawson. 2015. “Using Deliberative Democracy to Identify Energy Policy Priorities in the United States.” *Energy Research & Social Science* 8: 184–189.
Google Scholar WorldCat

Carley, Sanya, Tom Evans, and David Konisky. 2018. “Adaptation, Culture, and the Energy Transition in American Coal Country.” *Energy Research and Social Science* 37: 133–139.
Google Scholar WorldCat

Carley, Sanya, and Chris J. Miller. 2012. “Regulatory Stringency and Policy Drivers: A Reassessment of Renewable Portfolio Standards.” *Policy Studies Journal* 40, no. 4: 730–756.
Google Scholar WorldCat

Castiglioni, Claudia. 2015. “No Longer a Client, Not Yet a Partner: the U.S.-Iranian Alliance in The Johnson Years.” *Cold War History* 15, no. 4: 491–509.
Google Scholar WorldCat

Center for Climate and Energy Solutions. 2016. “Nuclear Energy.” https://www.c2es.org/content/nuclear-energy/.
WorldCat

Chandler, Jess. 2009. “Trendy Solutions: Why Do States Adopt Sustainable Energy Portfolio Standards?” *Energy Policy* 37: 3274–3281.
Google Scholar WorldCat

Chavez, Chris. 2019. “Local Government and Clean Air.” *Coalition for Clean Air blog, February* 13. https://www.ccair.org/local-government-clean-air/.
WorldCat

Cherp, Aleh, and Jessica Jewell. 2011. “The Three Perspectives on Energy Security: Intellectual History, Disciplinary History, and the Potential for Integration.” *Current Opinion in Environmental Sustainability* 3, no. 4: 202–212.
Google Scholar WorldCat

Chick, Martin. 2007. *Electricity and Energy Policy in Britain, France and the United States since 1945*. Northampton, MA: Edward Elgar Publishing.
Google Scholar Google Preview WorldCat COPAC

Childs, William R. 2011. "Energy Policy and the Long Transition in America." *Origins: National Event in Historical Perspective* 5, no. 2. http://origins.osu.edu/article/energy-policy-and-long-transition-america.
Google Scholar WorldCat

Chiou, Fang-Yi, and Lawrence S. Rothenberg. 2017. *The Enigma of Presidential Power: Parties, Policies and Strategic Uses of Unilateral Action*. New York, NY: Cambridge University Press.
Google Scholar Google Preview WorldCat COPAC

Chubb, John. 1983. *Interest Groups and the Bureaucracy: The Politics of Energy*. Stanford, CA: Stanford University Press.
Google Scholar Google Preview WorldCat COPAC

Climate Action Tracker. 2019. "*USA Country Summary.*" https://climateactiontracker.org/countries/usa/.
Google Scholar Google Preview WorldCat COPAC

p. 396 Clinton, William J. 1994. "*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.*" Executive Order (E.O.) 12898.
Google Scholar Google Preview WorldCat COPAC

Commoner, Barry. 1979. *The Politics of Energy*. New York: Random House.
Google Scholar Google Preview WorldCat COPAC

Cook, John, Dana Nuccitelli, Sara A. Green, Mark Richardson, Bärbel Winkler, Rob Painting, Robert Way, et al. 2013. "Quantifying the Consensus on Anthropogenic Global Warming in the Scientific Literature." *Environmental Research Letters* 8, no. 2: 024024.
Google Scholar WorldCat

Cooper, Mark. 2018. "Governing the Global Climate Commons: The Political Economy of State and Local Action, after the US Flip-Flop on the Paris Agreement." *Energy Policy* 118: 440–454.
Google Scholar WorldCat

Crafts, Nicholas, and Gianni Toniolo. 2012. "'Les trente glorieuses': From the Marshall Plan to the oil crisis." In *The Oxford Handbook of Postwar European History*, edited by Dan Stone, 356–378.
Google Scholar Google Preview WorldCat COPAC

Crowder, Larry B., Gail Osherenko, Oran Young, Satie Airamé, Elliot A. Norse, Nancy Baron, John C. Day, et al. 2006. "Resolving Mismatches in US Ocean Governance" *Science* 313: 617–618.
Google Scholar WorldCat

Daalder, Ivo, and James Lindsay. 2005. "Why the Democrats Have a Hard Time Gaining Trust in Diplomacy and Security." *Brookings*, May 1. https://www.brookings.edu/articles/why-the-democrats-have-a-hard-time-gaining-trust-in-diplomacy-and-security/.
WorldCat

Daley, Jason. 2018. "What to Know About California's Commitment to 100 Percent Clean Energy by 2045." *Smithsonian Magazine Smart News*, September 12. https://www.smithsonianmag.com/smart-news/california-commits-100-percent-clean-energy-2045-180970262/.
WorldCat

Davis, Charles, and Jonathan M. Fisk. 2014a. "Analyzing Public Support for Fracking in the U.S." *Review of Policy Research* 31: 1–16.
Google Scholar WorldCat

Davis, Charles, and Jonathan Fisk. 2014b. “Energy Abundance or Environmental Worries? Analyzing Public Support for Fracking in the United States.” *Review of Policy Research* 31, no. 1: 1–16.
Google Scholar WorldCat

Davis, Charles, and Katherine Hoffer. 2012. “Federalizing Energy? Agenda Change and the Politics of Fracking.” *Policy Science* 45: 221–241.
Google Scholar WorldCat

Davis, Charles E. 2012. “The Politics of ‘Fracking’: Regulating Natural Gas Drilling Practices in Colorado and Texas.” *Review of Policy Research* 29: 177–191.
Google Scholar WorldCat

Davis, Charles E. 2014. “Substate Federalism and Fracking Policies: Does State Regulatory Authority Trump Local Land Use Autonomy?” *Environmental Science & Technology* 48, no. 15: 8397–8403.
Google Scholar WorldCat

Davis, Charles E. 2017. “Shaping State Fracking Policies in the United States: An Analysis of Who, What, and How.” *State and Local Government Review* 49, no. 2: 140–150.
Google Scholar WorldCat

Davis, Chris, Andrew Bollinger, and Gerard P. J. Dijkema. 2016. “The State of the States: Data-Driven Analysis of the US Clean Power Plan.” *Renewable and Sustainable Energy Reviews* 60: 631–652.
Google Scholar WorldCat

DeSombre, Elizabeth. 2000. *Domestic Sources of International Environmental Policy: Industry, Environmentalists, and US Power*. Cambridge, MA: MIT Press.
Google Scholar Google Preview WorldCat COPAC

Dincer, Oguzhan, James E. Payne, and Kristi Simkins. 2014. “Are State Renewable Portfolio Standards Contagious?” *American Journal of Economics and Sociology* 73, no. 2: 325–340.
Google Scholar WorldCat

Dryzek, John S., and Richard B. Norgaard. 2011. “Climate Change and Society: Approaches and Responses.” In *The Oxford Handbook of Climate Change and Society* 3–17.

Dunlap, Riley E., and Angela G. Mertig. 2014. “The Evolution of the US Environmental Movement from 1970 to 1990: An Overview.” In *American Environmentalism*, 13–22. Taylor & Francis.
Google Scholar Google Preview WorldCat COPAC

p. 397 Dunlap, Riley E., and Aaron M. McCright, and Jerrod H. Yarosh. 2016. “The Political Divide on Climate Change: Partisan Polarization Widens in the US.” *Environment: Science and Policy for Sustainable Development* 58, no. 5: 4–23.
Google Scholar WorldCat

Dunn, David Hastings, and Mark J. L. McClelland. 2013. “Shale Gas and the Revival of American Power: Debunking Decline?” *International Affairs* 89, no. 6: 1411–1428.
Google Scholar WorldCat

Ebinger, Charles K. 2016. “Six Years from the BP Horizon Oil Spill: What We’ve Learned and What We shouldn’t Misunderstand.” Brookings *PlanetPolicy* (blog), April 20. https://www.brookings.edu/blog/planetpolicy/2016/04/20/6-years-from-the-bp-deepwater-horizon-oil-spill-what-weve-learned-and-what-we-shouldnt-misunderstand/.
WorldCat

Elkins, Paul, and Terry Baker. 2001. “Carbon Taxes and Carbon Emissions Trading.” *Journal of Economic Surveys* 15, no. 3: 325–376.

Google Scholar WorldCat

Ellis, Sylvia. 2013. *Freedom's Pragmatist: Lyndon Johnson and Civil Rights*. Gainesville: University Press of Florida.
Google Scholar Google Preview WorldCat COPAC

Engel, Kirsten. 2006. "State and Local Climate Change Initiatives: What Is Motivating State and Local Governments to Address a Global Problem and What Does This Say about Federalism and Environmental Law." *Urban Law* 38: 1015.
Google Scholar WorldCat

Fischetti, Mark. 2012. "Ohio Earthquake Likely Caused by Fracking Wastewater." *Scientific News*, January 4.
http://esciencenews.com/sources/scientific.american/2012/01/04/ohio.earthquake.likely.caused.fracking.wastewater.
WorldCat

Fisk, Jonathan M., 2016. "Fractured Relationships: Exploring Municipal Defiance in Colorado, Texas, and Ohio." *State and Local Government Review* 48, no 2: 75–86.
Google Scholar WorldCat

Fitzwater, Savanna, Abraham Tidwell, and Jen Schneider. 2015. "The Nuclear Pipeline: Integrating Nuclear Power and Climate Change." *Engineering Identities, Epistemologies and Values: Engineering Education and Practice in Context* 2: 271–286.
Google Scholar WorldCat

Flaxman, Seth, Sharad Goel, and Justin Rao. 2016. "Filter Bubbles, Echo Chambers, and Online News Consumption." *Public Opinion Quarterly* 80, no. 1: 298–320.
Google Scholar WorldCat

Fowler, Luke, and Joseph Breen. 2013. "The Impact of Political Factors on States' Adoption of Renewable Portfolio Standards." *The Electricity Journal* 26, no. 2: 79–94.
Google Scholar WorldCat

Fredriksson, Per G., and Daniel L. Millimet. 2002a. "Strategic Interaction and the Determination of Environmental Policy across US States." *Journal of Urban Economics* 51, no. 1: 101–122.
Google Scholar WorldCat

Fredriksson, Per G., and Daniel J. Millimet. 2002b. "Is There a 'California Effect' in US Environmental Policymaking?" *Regional Science and Urban Economics* 32, no. 6: 737–764.
Google Scholar WorldCat

Freeman, Jody. 2017. "The Uncomfortable Convergence of Energy and Environmental Law." *Harvard Environmental Law Review* 41: 339.
Google Scholar WorldCat

Friedman, Lisa. 2019. "In a Switch, Some Republicans Start Citing Climate Change as Driving Their Policies." *New York Times*, April 30. https://www.nytimes.com/2019/04/30/climate/republicans-climate-change-policies.html.
WorldCat

Gailmard, Sean, and John Patty. 2013. *Learning While Governing: Expertise and Accountability in the Executive Branch*. Chicago: University of Chicago Press.
Google Scholar Google Preview WorldCat COPAC

Goho, Shaun A. 2012. "Municipalities and Hydraulic Fracturing: Trends in State Pre-emption." *Planning & Environmental Law* 64: 3–9.
Google Scholar WorldCat

Gormley, William. 1983. *The Politics of Public Utility Regulation*. Pittsburgh: University of Pittsburgh Press.
Google Scholar Google Preview WorldCat COPAC

Goudie, Andrew. 2019. *Human Impact on the Natural Environment*. 8th ed. Hoboken, NJ: Wiley and Sons.
Google Scholar Google Preview WorldCat COPAC

Goulder, Lawrence H., and Andrew R. Schein. 2013. "Carbon Taxes versus Cap and Trade: A Critical Review." *Climate Change Economics* 4, no. 3: 1350010.
Google Scholar WorldCat

p. 398

Graham, Bob, and William Reilly. 2011. "The National Commission on the BP Deepwater Horizon Spill and Offshore Drilling." In *Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling: Report to the President* NYC and Washington, DC. https://unfoundation.org/.
Google Scholar Google Preview WorldCat COPAC

Green, Chandler. 2019. "7 Ways U.S. States are Leading Climate Action." New York, NY: United Nations Foundation. https://unfoundation.org/blog/post/7-ways-u-s-states-are-leading-climate-action/.
WorldCat

Gromet, Dena, Howard Kunreuther, and Richard Larrick. 2013. "Political Ideology Affects Energy-Efficiency Attitudes and Choices." *Proceedings of the National Academy of Sciences of the United States of America* 110, no. 23: 9314–9319.
Google Scholar WorldCat

Guy, Sophie, Yoshihisa Kashima, Iain Walker, and Saffron O'Neill. 2014. "Investigating the Effects of Knowledge and Ideology on Climate Change Beliefs." *European Journal of Social Psychology* 44, no. 5: 421–429.
Google Scholar WorldCat

Harrison, Kathryn. 2010. "The Comparative Politics of Carbon Taxation." *Annual Review of Law and Social Science* 6: 507–529.
Google Scholar WorldCat

Hayhoe, Katherine, Haroon S. Kheshgi, Atul K. Jain, and Donald J. Wuebbles. 2002. "Substitution of Natural Gas for Coal: Climatic Effects of Utility Sector Emissions." *Climatic Change* 54, nos. 1–2: 107–139.
Google Scholar WorldCat

Hays, Warren. 1987. *Beauty, Health, and Permanence: Environmental Politics in the United States, 1955–1985*. New York, NY: Cambridge University Press.
Google Scholar Google Preview WorldCat COPAC

Hochschild, Arlie, and David Hochschild. 2018. "More Republicans Than You Think Support Action on Climate Change." *New York Times*, December 29. https://www.nytimes.com/2018/12/29/opinion/sunday/republicans-climate-change-polls.html.
WorldCat

Hoffman, Carl. 2010. "Special Report: Why the BP Oil Rig Blowout Happened." *Popular Mechanics*, September 2. https://www.popularmechanics.com/science/energy/a6065/how-the-bp-oil-rig-blowout-happened/.
WorldCat

Hongtao, Yi, and Richard C. Feiock, 2012. "Policy Tool Interactions and the Adoption of State Renewable Portfolio Standards." *Review of Policy Research, Policy Studies Organization* 29, no. 2: 193–206.
Google Scholar WorldCat

Howarth, Robert W., Renee Santoro, and Anthony Ingraffea. 2011. "Methane and the Greenhouse-Gas Footprint of Natural Gas from Shale Formations." *Climatic Change* 106, no. 4: 679.
Google Scholar WorldCat

Huang, Ming-Yuan, R. Janaki, R. Alvalapati, Douglas Carter, and Matthew Langholtz. 2007. "Is the choice of renewable portfolio standards random?" *Energy Policy* 35, no. 11: 5571–5575.
Google Scholar WorldCat

Hughes, Llewelyn, and Phillip Lipscy. 2013. "The Politics of Energy." *Annual Review of Political Science* 16: 449–469.
Google Scholar WorldCat

Hultman, Nathan. 2010. "Beyond Petroleum: The Broader Effects of the Deepwater Horizon Oil Spill." Brookings, August 24. https://www.brookings.edu/opinions/beyond-petroleum-the-broader-effects-of-the-deepwater-horizon-oil-spill/.
WorldCat

International Panel on Climate Change. 2018. "Summary for Urban Policy Makers: What the IPCC Special Report on Global Warming of 1.5 Degrees Celsius Means for Cities." https://www.ipcc.ch/site/assets/uploads/sites/2/2018/12/SPM-for-cities.pdf.
WorldCat

International Panel on Climate Change. 2019. "*Special Report: Global Warming of 1.5 Degrees C.*" https://www.ipcc.ch/sr15/.
Google Scholar Google Preview WorldCat COPAC

Jackson, Robert B., Avner Vengosh, William Carey, Richard J. Davies, Thomas H. Darrah, Francis O'Sullivan, and Gabrielle Pétron. 2014. "The Environmental Costs and Benefits of Fracking." *Annual Review of Environment and Resources* 39: 327–362.
Google Scholar WorldCat

Jaffe, Cale. 2017. "Melting the Polarization Around Climate Change Politics." *Georgetown International Environmental Law Review* 30: 455.
Google Scholar WorldCat

p. 399

Jarvis, Alice-Azania. 2010. "BP Oil Spill: Disaster by the Numbers." *Independent*, September 14. https://www.independent.co.uk/environment/bp-oil-spill-disaster-by-numbers-2078396.html.
WorldCat

Jasny, Lorien, Joseph Waggle, and Dana Fisher. 2015. "An Empirical Examination of Echo Chambers in US Climate Policy Networks." *Nature Climate Change* 5, no. 8: 782–786.
Google Scholar WorldCat

Jervey, Ben. 2018. "*Trump Administration to Halt Clean Air Standards, Revoke California's Right to Regulate.*" DeSmog blog, July 24. https://www.desmogblog.com/2018/07/24/trump-administration-halt-clean-car-standards-revoke-california-s-right-regulate.
Google Scholar Google Preview WorldCat COPAC

Jung, Jiyeon, and Yoomo Koo. 2018. "Analyzing the Effects of Car Sharing Services on the Reduction of Greenhouse Gas (GHG) Emissions." *Sustainability* 10: 539.
Google Scholar WorldCat

Kaldjian, Emily, and Priya Barua. 2019. "*The US Underwent a Quiet Clean Energy Revolution Last Year.*" World Resources Institute, January 23. https://www.wri.org/blog/2019/01/us-underwent-quiet-clean-energy-revolution-last-year
Google Scholar Google Preview WorldCat COPAC

Kammen, Daniel M., and Deborah A. Suntor. 2016. "City-Integrated Renewable Energy for Urban Sustainability." Featured Research. Goldman School of Public Policy, UC Berkeley. https://gspp.berkeley.edu/research/featured/city-integrated-renewable-energy-for-urban-sustainability.
WorldCat

Karch, Andrew. 2007. *Democratic Laboratories: Policy Diffusion among the American States*. Ann Arbor: University of Michigan Press.
Google Scholar Google Preview WorldCat COPAC

Knittel, Christopher. 2011. "Automobiles on Steroids: Product Attribute Trade-Offs and Technological Progress in the Automobile Sector." *American Economic Review* 101, no. 7: 3368–3399.
Google Scholar WorldCat

Kollman, Kenneth, and Pradeep Chhibber. 2004. *The Formation of National Party Systems: Federalism and Party Competition in Canada, Great Britain, India, and the United States*. Princeton, NJ: Princeton University Press.

Krause, Rachel. 2011. "Policy Innovation, Intergovernmental Relations, and the Adoption of Climate Protection Initiatives by US Cities." *Journal of Urban Affairs* 33, no. 1: 45–60.
Google Scholar WorldCat

Kuhlman, Tom, and John Farrington. 2010. "What Is *Sustainability*?" *Sustainability* 2, no. 11: 3436–3448.

Kumar, Surender, Hidemichi Fujii, and Shunsuke Managi. 2015. "Substitute or Complement? Assessing Renewable and Nonrenewable Energy in OECD Countries." *Applied Economics* 47, no. 14: 1438–1459.
Google Scholar WorldCat

Lee, Yong Gyo, Xavier Garza-Gomez, and Rose M. Lee. 2018. "Ultimate Costs of the Disaster: Seven Years After the *Deepwater Horizon* Oil Spill." *Journal of Corporate Accounting & Finance* 29, no. 1. doi:10.1002/jcaf.22306. 10.1002/jcaf.22306
Crossref

Lilley, Jonathan, and Jeremy Firestone. 2013. "The Effect of the 2010 Gulf Oil Spill on Public Attitudes toward Offshore Oil Drilling and Wind Development." *Energy Policy* 62: 90–98.
Google Scholar WorldCat

Linn, Joshua, Dallas Burtraw, and Kristen McCormack. 2016. "*An Economic Assessment of the Supreme Court's Stay of the Clean Power Plan and Implications for the Future.*" Resources for the Future Discussion Paper, 16–21.
Google Scholar Google Preview WorldCat COPAC

Linn, Joshua, and Kristen McCormack. 2019. "The Roles of Energy Markets and Environmental Regulation in Reducing Coal-Fired Plant Profits and Electricity Sector Emissions." *Rand Journal of Economics*, 50, no. 4: 1–35.
Google Scholar WorldCat

Lisowski, Michael. 2002. "Playing the Two-Level Game: US President Bush's Decision to Repudiate the Kyoto Protocol." *Environmental Politics* 11, no. 4: 101–119.
Google Scholar WorldCat

Lutsey, Nicholas, and Daniel Sperling. 2008. "America's Bottom-up Climate Change Mitigation Policy." *Energy Policy* 36, no. 2: 673–685.
Google Scholar WorldCat

Lyon, Thomas, and Haitao Yin. 2010. "Why Do States Adopt Renewable Portfolio Standards? An Empirical Investigation." *The Energy Journal* 31, no. 3: 133–157.
Google Scholar WorldCat

Massachusetts v. EPA, 549 U.S. 497 (2007).
Google Scholar Google Preview WorldCat COPAC

Matisoff, D.C. 2008. "The Adoption of State Climate Change Policies and Renewable Portfolio Standards: Regional Diffusion or Internal Determinants?" *Review of Policy Research* 25, no. 6: 527–546.
Google Scholar WorldCat

Matisoff, Daniel C., and Jason Edwards. 2014. "Kindred Spirits or Intergovernmental Competition? The Innovation and Diffusion of Energy Policies in the American States (1990–2008)." *Journal of Environmental Politics* 23, no. 5: 795–817.
Google Scholar WorldCat

McCarty, Nolan, Keith Poole, and Howard Rosenthal. 2006. *Polarized America: The Dance of Ideology and Unequal Riches*. Cambridge, MA: MIT Press.

Google Scholar Google Preview WorldCat COPAC

McCollum, David L., Volder Krey, and Keywan Riahi. 2011. "An Integrated Approach to Energy Sustainability." *Nature Climate Change* 1, no. 9: 428.
Google Scholar WorldCat

McCright, Aaron M. 2008. "The Social Bases of Climate Change Knowledge, Concern, and Policy Support in the US General Public." *Hofstra Law Review* 37: 1017.
Google Scholar WorldCat

Meckling, Jonas, Nina Kelsey, Eric Biber, and John Zysman. 2015. "Winning Coalitions for Climate Policy." *Science* 349, no. 6253: 1170–1171.
Google Scholar WorldCat

Melina, Remy. 2010. "Why Is Offshore Drilling So Dangerous?" *LiveScience*, May 28. https://www.livescience.com/32614-why-is-offshore-drilling-so-dangerous-.html.
WorldCat

Melosi, Martin V. 1980. *Pollution and Reform in American Cities: 1870–1930*. Austin, TX: University of Texas Press.
Google Scholar Google Preview WorldCat COPAC

Meng, Qingmin. 2014. "Modeling and Prediction of Natural Gas Fracking Pad Landscapes in the Marcellus Shale Region, USA." *Landscape and Urban Planning* 121: 109–116.
Google Scholar WorldCat

Meng, Qingmin. 2018. "Fracking Equity: A Spatial Justice Analysis Prototype." *Land Use Policy* 70: 10–15.
Google Scholar WorldCat

Meyers, Joe, Benjamin Roberts, Brandon Lee, and Shannon Hill. 2018. "*Outer Continental Shelf Oil Spill Causal Factors Report.*" US Department of the Interior, Bureau of Ocean Energy, Alaska OCS Region.
Google Scholar Google Preview WorldCat COPAC

Miller, Storm Aragon. 2016. *Precarious Paths to Freedom: The United States, Venezuela, and The Latin American Cold War*. Albuquerque: University of New Mexico Press.

Milstein, Irena, and Asher Tishler. 2011. "Intermittently Renewable Energy, Optimal Capacity Mix and Prices in a Deregulated Electricity Market." *Energy Policy* 39, no. 7: 3922–3927.
Google Scholar WorldCat

Mintrom, Michael, and Phillipa Norman. 2009. "Policy Entrepreneurship and Policy Change." *Policy Studies Journal* 37, no. 7: 649–667.
Google Scholar WorldCat

Mernit, Judith Lewis. 2018. "Can the EPA Roll Back California's Clean Air Standards?" *The American Prospect*, August 10. https://prospect.org/article/can-epa-roll-back-californias-clean-air-standards.
WorldCat

Morgan, H. Wayne, 1973. "America's First Environmental Challenge, 1865–1920." *Essays on the Gilded Age*: 87–108.
Google Scholar WorldCat

Morrice, Emily, and Ruth Colagiuri. 2013. "Coal Mining, Social Injustice and Health: A Universal Conflict of Power and Priorities." *Health & Place* 19: 74–79.
Google Scholar WorldCat

Mukherjee, Deep, and Mohammad Arshad Rahman. 2016. "To Drill or Not to Drill? An Econometric Analysis of US Public

Opinion." *Energy Policy* 91: 341–351.
Google Scholar WorldCat

Murray, Brian, and Peter Maniloff. 2015. "Why Have Greenhouse Emissions in RGGI States Declined? An Econometric Attribution to Economic, Energy Market, and Policy Factors." *Energy Economics* 51: 581–589.
Google Scholar WorldCat

p. 401

Nanda, Ramana, Ken Younge, and Lee Fleming. 2014. "Innovation and Entrepreneurship in Renewable Energy." In *The Changing Frontier: Rethinking Science and Innovation Policy*, 199–232. Cambridge, MA: National Bureau of Economic Research.
Google Scholar Google Preview WorldCat COPAC

National Conference of State Legislatures. 2019. "*State Renewable Portfolio Standards and Goals.*" Available at https://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx.
Google Scholar Google Preview WorldCat COPAC

National Oceanic and Atmospheric Administration, Office of Response and Restoration. n.d. "*Largest Oil Spills Affecting U.S. Waters Since 1969.*" https://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/largest-oil-spills-affecting-us-waters-1969.html.
Google Scholar Google Preview WorldCat COPAC

Neill, Katharine A., and John C. Morris. 2012. "A Tangled Web of Principals and Agents: Examining the Deepwater Horizon Oil Spill through a Principal–Agent Lens." *Politics & Policy* 40, no. 4: 629–656.
Google Scholar WorldCat

Neustadt, Richard. 1980. *Presidential Power and the Modern Presidents*. Hoboken, NJ: Wiley.
Google Scholar Google Preview WorldCat COPAC

New State Ice Co. v. Liebmann, 285 U.S. 262 (1932).
Google Scholar Google Preview WorldCat COPAC

Nong, Duy, and Mahinda Siriwardana. 2018. "Effects on the US Economy of Its Proposed Withdrawal from the Paris Agreement: A Quantitative Assessment." *Energy* 159: 621–629.
Google Scholar WorldCat

Olson, Erik D. 1984. "The Quiet Shift of Power: Office of Management & Budget Supervision of Environmental Protection Agency Rulemaking under Executive Order 12,291." *Virginia Journal o of Natural Resources Law* 4, no. 1: 1–80b.
Google Scholar WorldCat

Olson, Mancur. 2009. *The Logic of Collective Action* Vol. 124. Cambridge, MA: Harvard University Press.
Google Scholar Google Preview WorldCat COPAC

OPEC Secretariat. 2015. "Oil Demand and Transportation: An Overview." *OPEC Energy Review* 39, no. 4: 349–375.
Google Scholar WorldCat

Osofsky, Howard J., Joy D. Osofsky, and Tonya C. Hansel. 2011. "Deepwater Horizon Oil Spill: Mental Health Effects on Residents in Heavily Affected Areas." *Disaster Medicine and Public Health Preparedness* 5, no. 4: 80–286.
Google Scholar WorldCat

Parinandi, Srinivas. 2018. "Invention and Borrowing among State Legislatures." Working Paper.

Parinandi, Srinivas, and Matthew Hitt. 2018. "How Politics Influences the Energy Pricing Decisions of Elected Public Utilities Commissioners." *Energy Policy* 118: 77–87.
Google Scholar WorldCat

Parinandi, Srinivas. 2020. "Policy Inventing and Borrowing among State Legislatures." American Journal of Political Science.

https://doi/abs/10.1111/ajps.12513
WorldCat

Pellow, David N., and Robert J. Brulle. 2005. *Power, Justice, and the Environment: A Critical Appraisal of the Environmental Justice Movement*. Cambridge, MA: MIT Press.
Google Scholar Google Preview WorldCat COPAC

Peters, Jeffrey C., and Thomas W. Hertel. 2017. "Achieving the Clean Power Plan 2030 CO2 Target with the New Normal in Natural Gas Prices." *The Energy Journal* 38, no. 5. doi:10.5547/01956574.38.5.jpet 10.5547/01956574.38.5.jpet
Google Scholar WorldCat Crossref

Peterson, Thomas D., and Adam Z. Rose. 2006. "Reducing Conflicts between Climate Policy and *Energy Policy* in the US: The Important Role of the States." *Energy Policy* 34, no. 5: 619–631.

Pew Research Center. 2017. "*Public Divides Over Environmental Regulation and Energy Policy.*" https://www.pewresearch.org/science/2017/05/16/public-divides-over-environmental-regulation-and-energy-policy/.
Google Scholar Google Preview WorldCat COPAC

Plumer, Brad. 2019. "Blue States Roll out Aggressive Strategies. Red States Keep to the Sidelines." *New York Times*, June 21. https://www.nytimes.com/2019/06/21/climate/states-climate-change.html.
WorldCat

Plumer, Brad, and Nadja Popavich. 2019. "These Countries Have Prices on Carbon: Are They Working?" *New York Times*, April 2. https://www.nytimes.com/interactive/2019/04/02/climate/pricing-carbon-emissions.html.
WorldCat

p. 402 Pollitt, Michael G. 2012. "The Role of Policy in Energy Transitions: Lessons from the Energy Liberalisation Era." *Energy Policy* 50: 128–137.
Google Scholar WorldCat

Powell, Tarika. 2017. "*Is Your Natural Gas Actually Fracked?*" Sightline Institute, October 30. https://www.sightline.org/2017/10/30/is-your-natural-gas-actually-fracked/.
Google Scholar Google Preview WorldCat COPAC

Rabe, Barry. 2004. *Statehouse and Greenhouse: The Emerging Politics of American Climate Change Policy*. Washington, DC: Brookings.
Google Scholar Google Preview WorldCat COPAC

Rabe, Barry. 2011. "Contested Federalism and American Climate Policy." *The Journal of Federalism* 41, no. 3: 494–521.
Google Scholar WorldCat

Rabe, Barry. 2006. "Race to the Top: The Expanding Role of US State Renewable Portfolio Standards." *Sustainable Development Law and Policy* 7: 10.
Google Scholar WorldCat

Rabe, Barry. 2014. "Shale Play Politics: The Intergovernmental Odyssey of American Shale Governance." *Environmental Science & Technology* 48, no. 15: 8369–8375.
Google Scholar WorldCat

Rahmouni, Soumia, Noureddine Settou, Nasreddine Chennouf, Belkhir Negrou, and Mustapha Houari. 2014. "A Technical, Economic, and Environmental Analysis of Combining Geothermal Energy with Carbon Sequestration for Hydrogen Production." *Energy Procedia* 50: 263–269.
Google Scholar WorldCat

Randolph, Jimmy, and Martin Saar. 2011. “Combining Geothermal Energy Capture with Geologic Carbon Dioxide Sequestration.” *Geophysical Research Letters* 38, no. 10: 1–7.
Google Scholar WorldCat

Ranson, Matthew, and Robert Stavins. 2016. “Linkage of Greenhouse Gas Emissions Trading Systems: Learning from Experience.” *Climate Policy* 16, no. 3: 284–300.
Google Scholar WorldCat

Razeghi, G., B. Shaffer, and S. Samuelsen. 2017. “Impact of Electricity Deregulation in the State of California.” *Energy Policy* 103: 105–115.
Google Scholar WorldCat

Roberts, David. 2019. “*Americans Love Clean Energy: Do They Care If It Includes Nuclear?*” *Vox*, April 23. https://www.vox.com/energy-and-environment/2019/4/23/18507297/nuclear-energy-renewables-voters-poll.
Google Scholar Google Preview WorldCat COPAC

Roberts, Joel. 2005. “Bush Signs Sweeping Energy Bill.” *CBS News*, August 8. https://www.cbsnews.com/news/bush-signs-sweeping-energy-bill/2/.
WorldCat

Rosentiel, Tom. 2010. “*Oil Spill Seen as Ecological Disaster.*” Pew Research Center, May 11. https://www.pewresearch.org/2010/05/11/oil-spill-seen-as-ecological-disaster/.
Google Scholar Google Preview WorldCat COPAC

Rothman, Lily. 2017. Here’s Why the Environmental Protection Agency Was Created.” *Time*, March 22. http://time.com/4696104/environmental-protection-agency-1970-history/.
WorldCat

Rueb, Emily. 2017. “How New York City Gets Its Electricity.” *New York Times*, February 10. https://www.nytimes.com/interactive/2017/02/10/nyregion/how-new-york-city-gets-its-electricity-power-grid.html.
WorldCat

Safford, Thomas G., Jessica D. Ulrich, and Lawrence C. Hamilton. 2012. “Public Perceptions of the Response to the Deepwater Horizon Oil Spill: Personal Experiences, Information Sources, and Social Context.” *Journal of Environmental Management* 113: 31–39.
Google Scholar WorldCat

Shanley, Robert. 1983. “Presidential Executive Orders and Environmental Policy.” *Presidential Studies Quarterly* 13: 405–16.
Google Scholar WorldCat

Scheraga, Joel D. 1994. “Energy and the Environment Something New under the Sun?” *Energy Policy* 22, no. 10: 798–803.
Google Scholar WorldCat

Schmalensee, Richard, and Robert Stavins. 2015. “Lessons Learned from Three Decades of Experience with Cap-and-Trade.” National Bureau of Economic Research Working Paper Series (21742). https://www.nber.org/papers/w21742.pdf.
WorldCat

Schneider, Saundra K. 1992.” Governmental Response to Disasters: The Conflict between Bureaucratic Procedures and Emergent Norms.” *Public Administration Review*: 52, no. 2: 135–145.
Google Scholar WorldCat

Shor, Boris, and Nolan McCarty. 2011. “The Ideological Mapping of American Legislatures.” *American Political Science Review* 105, no. 3: 530–551.
Google Scholar WorldCat

p. 403 Siegel, Josh. 2018. “Republicans Learn to Love Wind and Solar Jobs after Once Mocking Them.” *Washington Post*, October 23. https://www.washingtonexaminer.com/policy/energy/republicans-learn-to-love-wind-and-solar-jobs-after-once-mocking-them.
WorldCat

Siegel, Robert, and Jessica Cheung. 2016. “In Ohio Coal Country, Job Prospects Lie with Neither Coal Nor Trump’s Promises.” *National Public Radio All Things Considered*, December 13. https://www.npr.org/2016/12/13/504829671/in-ohio-coal-country-job-prospects-lie-with-neither-coal-nor-trumps-promises.
WorldCat

Small, Laura. 2015. “West Virginia Sticks with Coal Despite Trends in Favor of Cleaner Energy.” Environmental and Energy Study Institute. https://www.eesi.org/articles/view/west-virginia-sticks-with-coal-despite-trends-in-favor-of-cleaner-energy.
WorldCat

Smith, Lawrence C., Murphy Smith, and Paul Ashcroft. 2011. “Analysis of Environmental and Economic Damages from British Petroleum’s Deepwater Horizon Oil Spill.” *Albany Law Review* 74, no. 1: 563–585.
Google Scholar WorldCat

Sovacool, Benjamin K. 2008. “The Best of Both Worlds: Environmental Federalism and the Need for Federal Action on Renewable Energy and Climate Change.” *Stanford Environmental Law Journal* 27: 397.
Google Scholar WorldCat

State of California. 2019. “*California and Major Automakers Reach Groundbreaking Framework Agreement on Clean Emissions Standards.*” Office of Governor Gavin Newsome, July 25. https://www.gov.ca.gov/2019/07/25/california-and-major-automakers-reach-groundbreaking-framework-agreement-on-clean-emission-standards/.
Google Scholar Google Preview WorldCat COPAC

Stauffer, Nancy W. 2017. “State-Level Renewable Energy Standards: Strengthening Critical Public Support.” *MIT Energy Initiative News*, June 30. http://energy.mit.edu/news/state-level-renewable-energy-policies/.
WorldCat

Stavins, Robert N. 2008. “A Meaningful US Cap-and-Trade System to Address Climate Change.” *Harvard Environmental Law Review* 32: 293.
Google Scholar WorldCat

Stavins, Robert. 2011. “The Problem of the Commons: Still Unsettled after 100 Years.” *American Economic Review* 101, no. 1: 81–108.
Google Scholar WorldCat

Stern, Arthur C. 1982. “History of Air Pollution Legislation in the United States.” *Journal of the Air Pollution Control Association* 32, no. 1: 44–61.
Google Scholar WorldCat

Stigler, George. 1971. “The Theory of Economic Regulation.” *Bell Journal of Economics and Management* 2, no. 1: 3–21.
Google Scholar WorldCat

Stokes, Leah, and Christopher Warshaw. 2017. “Renewable Energy Policy Design and Framing Influence Public Support in the United States.” *Nature Energy* 2, no. 17107: 1–6.
Google Scholar WorldCat

Stradling, David. 2002. *Smokestacks and Progressives: Environmentalists, Engineers, and Air Quality in America, 1881–1951*. Baltimore, MD: John Hopkins Univeristy Press.
Google Scholar Google Preview WorldCat COPAC

Stradling, David, and Peter Thorsheim. 1999. “The Smoke of Great Cities: British and American Efforts to Control Air Pollution, 1860–1914.” *Environmental History* 4, no. 1: 6–31.

Google Scholar WorldCat

Szulecki, Kacsper. 2018. "Conceptualizing Energy Democracy." *Environmental Politics* 27, no. 1: 21–41.
Google Scholar WorldCat

Tulis, Jeffrey. 2017. *The Rhetorical Presidency*. Princeton, NJ: Princeton University Press.
Google Scholar Google Preview WorldCat COPAC

Union of Concerned Scientists. 2018. "*Existing Cap-and-Trade Programs to Cut Global Warming Emissions.*" https://www.ucsusa.org/global-warming/solutions/reduce-emissions/regional-cap-and-trade.html.
Google Scholar Google Preview WorldCat COPAC

United States Census. 2019. "*Quarterly Residential Vacancies and Homeownership, Second Quarter 2019.*" Release Number: CB19-98. https://www.census.gov/housing/hvs/files/currenthvspress.pdf.
Google Scholar Google Preview WorldCat COPAC

United States Conference of Mayors. 2019. "*Mayors Climate Protection Agreement.*" https://www.usmayors.org/mayors-climate-protection-center/.
Google Scholar Google Preview WorldCat COPAC

p. 404

US Chemical Safety and Hazard Investigation Board. 2014. "*Investigation Report: Explosion and Fire at the Macondo Well.*" https://www.csb.gov/assets/1/7/overview_-_final.pdf.
Google Scholar Google Preview WorldCat COPAC

US Climate Change Research Program. 2018. "*Fourth National Climate Assessment, Volume II: Impacts, Risks and Adaptation in the United States.*" https://www.globalchange.gov/nca4.
Google Scholar Google Preview WorldCat COPAC

US Const. amend. XIV, § 1.
Google Scholar Google Preview WorldCat COPAC

US Energy Information Administration. 2017. "*State Profiles and Energy Estimates—Rankings.*" https://www.eia.gov/state/rankings/.
Google Scholar Google Preview WorldCat COPAC

US Energy Information Administration. 2018a. "In 2018, the United States Consumed More Energy Than Ever Before." https://www.eia.gov/todayinenergy/detail.php?id=39092#.
WorldCat

US Energy Information Administration. 2018b. "*Use of Energy Explained.*" https://www.eia.gov/energyexplained/use-of-energy/.
Google Scholar Google Preview WorldCat COPAC

US Energy Information Administration. 2018c. "*Use of Energy Explained: Energy Use for Transportation.*" https://www.eia.gov/energyexplained/use-of-energy/transportation.php.
Google Scholar Google Preview WorldCat COPAC

US Energy Information Administration. 2018d. "*What Is U.S. Electricity Generation by Energy Source?*" https://www.eia.gov/tools/faqs/faq.php?id=427&t=3.
Google Scholar Google Preview WorldCat COPAC

US Energy Information Administration. 2019a. *Electric Power Monthly* series. https://www.eia.gov/electricity/monthly/.

US Energy Information Administration. 2019b. "*Nuclear Explained: Nuclear Energy and the Environment.*" https://www.eia.gov/energyexplained/nuclear/nuclear-power-and-the-environment.php.
Google Scholar Google Preview WorldCat COPAC

US Energy Information Administration. 2019c. "*State Profile and Energy Estimates: Ohio.*" https://www.eia.gov/state/?sid=OH.
Google Scholar Google Preview WorldCat COPAC

US Energy Information Administration. 2019d. "*Use of Energy Explained.*" https://www.eia.gov/energyexplained/use-of-energy/transportation.php.
Google Scholar Google Preview WorldCat COPAC

VandeHei, Jim, and Justin Blum. 2005. "Bush Signs Energy Bill, Cheers Steps Toward Self-Sufficiency." *Washington Post*, August 9. http://www.washingtonpost.com/wp-dyn/content/article/2005/08/08/AR2005080800124.html.
WorldCat

Vogel, David. 1997. "Trading Up and Governing Across: Transnational Governance and Environmental Protection." *Journal of European Public Policy* 4, no. 4: 556–571.
Google Scholar WorldCat

Volden, Craig, and Alan Wiseman. 2014. *Legislative Effectiveness in the United States Congress*. New York, NY: Cambridge University Press.
Google Scholar Google Preview WorldCat COPAC

Wallach, Phillip. 2019. "*Where Does U.S. Climate Policy Stand in 2019?*" Brooking Center on Regulation and Markets, March 22. https://www.brookings.edu/2019/03/22/where-does-u-s-climate-policy-stand-in-2019/.
Google Scholar Google Preview WorldCat COPAC

Warner, Barbara, and Jennifer Shapiro. 2013, "Fractured, fragmented federalism: A study in fracking regulatory policy." *Publius: The Journal of Federalism* 43, no. 3: 474–496.

Watkiss, Jeffrey D., and Douglas W. Smith. 1993. "The Energy Policy Act of 1992—A Watershed for Competition in the Wholesale Power Market." *Yale Journal on Regulation* 10: 447.
Google Scholar WorldCat

Weatherholtz, Tiffany. 2017. "Separating Controversy and Climate Change: How the United States Could Lead Climate Change and Energy Reform with the Growth of Renewable Energy Sources Globally." *Emory International Law Review* 32: 581.
Google Scholar WorldCat

Weiner, Brad, and David Hasemyer. 2017. "How Fossil Fuel Allies Are Tearing Apart Ohio's Embrace of Clean Energy." *Inside Climate News*, October 20. https://insideclimatenews.org/news/29102017/renewable-energy-ohio-rps-law-fossil-fuel-political-donations-coal.
WorldCat

Willie, Matt. 2011. "Hydraulic Fracturing and Spotty Regulation: Why the Federal Government Should Let States Control Unconventional Onshore Drilling." *BYU Law Review*: 1743.
Google Scholar WorldCat

p. 405

World Bank. 2019. "*CO2 Emissions (Metric Tons per Capita).*" https://data.worldbank.org/indicator/en.atm.co2e.pc
Google Scholar Google Preview WorldCat COPAC

Wright, James D., Eleanor Weber-Burdin, and Peter H. Rossi. 2013. *Natural Hazards and Public Choice: The State and Local Politics of Hazard Mitigation*. New York, NY: Elsevier.
Google Scholar Google Preview WorldCat COPAC

Yergin, Daniel. 1990. *The Prize: The Epic Quest for Oil, Money, and Power*. New York: Simon and Schuster.
Google Scholar Google Preview WorldCat COPAC

Yin, Haitao, and Nicholas Powers. 2010. "Do State Renewable Portfolio Standards Promote In-State Renewable Generation?"

Energy Policy 38, no. 2: 1140–1149.
Google Scholar WorldCat

Zahran, Sammy, Samuel D. Brody, Arnold Vedlitz, Himanshu Grover, and Caitlyn Miller. 2008. "Vulnerability and Capacity: Explaining Local Commitment to Climate-Change Policy." *Environment and Planning C: Government and Policy* 26: 544–562.
Google Scholar WorldCat

Zahran, Sammy, Himanshu Grover, Samuel D. Brody, and Arnold Vedlitz. 2008. "Risk, Stress and Capacity: Explaining Metropolitan Commitment to Climate Protection." *Urban Affairs Review* 43: 447–474.
Google Scholar WorldCat

Zhang, Yuqiang, Jason West, Rohit Mathur, Jia Xing, Christian Hogrefe, Shawn J. Roselle, Jesse O. Bash, et al. 2018. "Long-Term Trends in the Ambient PM 2.5-and O 3-Related Mortality Burdens in the United States under Emission Reductions from 1990 to 2010." *Atmospheric Chemistry and Physics* 18, no. 20: 15003–15016.
Google Scholar WorldCat