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Introduction

Energy-laden discourses over the last four plus decades often tout external events animating energy law and policy – embargos, natural gas shortages, blackouts, unhealthy air, rising carbon dioxide (CO₂) levels – and they occasionally focus on players presumably responsible for those events – vindictive Arab sheiks, greedy energy producers, scheming commodity traders, and recalcitrant utilities refusing to clean up their coal-fired power plants. When conversations instead shift toward specific energy policies themselves, those policies often are faulted for intruding into markets, not controlling markets enough, or poorly controlling markets, such as for oil, coal, natural gas, or renewables. Reflecting on his time in the Senate, Senator Bennett Johnston of Louisiana opines how “[i]f the first lesson of energy history is expect the unexpected, the second and a related lesson is the difficulty of anticipating market forces and regulating price and supply.” Each time decision makers thought that they knew best and intruded into markets, Senator Johnston posits, they often made the wrong choice – “largely because these are political judgments, ideologically driven and ponderously arrived at without proper appreciation of the facts – or after the facts have changed.”¹ And then all too often today energy policy remains cloaked behind sound bites: the war on coal, “drill-baby-drill,” or an all-of-the-above strategy. Each sound bite comes infused with an ideological or political bent, illustrated most recently with the 2017 mantra of “energy dominance.” Indeed, two scholars posit that “[e]nergy policy in the United States is shaped by ideological conflicts between the political parties and power interests with large assets at stake.”²

Less insidious factors may affect energy policy decisions as well. Energy producers, for instance, may lack sufficient incentives to explore new technologies. Inflation and economic conditions may retard investment – particularly if energy consumption continues declining on a per capita basis. Conversely, as we are currently witnessing with wind and solar power, both technologies have been around for some time, yet the

¹ Bennet Johnston, *In Energy, Expect the Unexpected: And Let the Market Show the Way*, ENERGY DAILY, Sept. 26, 2013, at 9.

² David E. Adelman, *David B. Spence, Ideology vs. Interest Group Politics in U.S. Energy Policy*, 95 N.C. L. REV. 339 (2017).

recent tax incentives and state policies provided enough of an impetus for not only promoting those technologies but also, in part, reducing the costs through research and development (R&D) programs. Consumers, too, may rebel against investments if they consider the costs too high. This occurred during the 1970s' energy crisis, when consumers fought against certain proposed policies.

Yet something more fundamental permeates the struggle of the United States to craft an ever-changing energy policy. In a fascinating account of aspects of energy policy's past, Peter Grossman explains how energy "legislation has produced mostly waste and confusion." He suggests that energy policy during the past four decades "has been a pursuit not of policies that failed but rather of conceptually failed policies." This is because, he aptly posits, much of our modern rhetoric, translated into policy, presumes that energy policy proceeds from two now misguided narratives, first that "[t]he United States has a dangerous dependence on foreign oil" and, second, that energy markets do not work efficiently. Where this takes him, though, is to the conclusion that "the only issue that should be addressed by energy policy is energy" and that intervention in the market should occur only following an "explicit identification of market failure." This even leads him to question all energy subsidies, including for renewables – which he suggests would be a "niche" market without the subsidies. Of course, under the guise of promoting the need for "institutional changes," Grossman does advocate legal changes to address, for instance, changing the electric grid to a smart grid.³

But Grossman's affinity for minimal governmental intrusion into markets ought to be tempered somewhat. Our capacity for technological achievements often follows governmental commands. This occurred when the US automobile industry complained how it could not install catalytic converters quickly enough, and it did. It occurred later with the debate surrounding the installation of technological systems for controlling emissions from power plants. When the automobile industry claimed during its fight with California that it could not effectively sell enough hybrid vehicles in the California market and that Honda and Toyota were effectively "dumping" (selling at below cost) their cars, the US industry not too long after began selling their hybrids in the US market. And when, for example, Grossman questions the efficacy of claims for electric cars or electric power from renewables, history suggests otherwise, as we may be on the cusp of an electric vehicle transition. To be sure, when Samuel Insull promoted the electric vehicle in the early twentieth century, the idea faded because little incentive – other than Insull's desire to increase sales of electric energy – existed for its production or consumption.

We therefore examine aspects of energy law and policy's history from a different perspective: energy law and regulation enjoy an iterative relationship with discrete events. Rather than being the product of discrete events, energy-related decisions,

³ PETER GROSSMAN, U.S. ENERGY POLICY AND THE PURSUIT OF FAILURE 324, 332–37 (Cambridge Univ. Press 2013).

whether by Congress, courts, or executive agencies, are at least in part the cause of them. The chapters that follow chronicle how decisions by the Supreme Court, Congress, and federal agencies have shaped the energy industry and, on many occasions, have led to unintended and sometimes disastrous results, prompting Congress and federal agencies to attempt to correct these missteps. But much remains to be done if we are committed to modernizing our energy systems to meet twenty-first-century environmental and consumer protection goals.

What we learn from examining critical junctures in our country's struggle to develop an energy policy that integrates and effectively responds to environmental and economic policies is that our hubris often triggers problems, which then leads to further hubris as policymakers attempt to solve those problems. It is nothing short of folly to assume that policymakers have the capacity to anticipate how their decisions will unfold and notably where they will go awry. A folly has two definitions. The first is a "foolish act, idea or practice." The second is a "lavishly produced theatrical review." Energy policy decisions over the last century by Congress, the Supreme Court, and federal agencies combine both kinds of follies – well-intentioned but misguided decisions on energy and environment enlivened by political theater in Congress. These decisions admittedly include successes – albeit, though, some that merely remedy earlier mistakes. *Energy Follies* recounts the follies and occasional successes of US energy policy in terms of their impact on energy supply, economic costs, and the environment, and it suggests some lessons for addressing how legal and institutional changes could modernize our energy systems.

The book's next eight chapters focus on specific critical junctures or events over the last century that have shaped our modern energy systems. To set the stage, Chapter 2 begins by chronicling how modern federal energy law first emerged with the passage of the Federal Water Power Act in 1920. While this became the country's first principal foray into crafting a federal law focusing on electric energy, Congress and the president debated for years the narrow quest of how best to harness the power potential of the nation's waters. And, for our purposes, it reflected early-twentieth-century issues that dissipated within several subsequent decades. Chapter 3 then portrays the events precipitating the need for further federal regulation of interstate electric and natural gas systems. As both electric and natural gas systems sprawled across state lines, resolving who would or could regulate these burgeoning industries became elemental. The Supreme Court weighed in with its 1927 decision in *Public Utilities Commission v. Attleboro*, pushing the electric industry into two jurisdictional spheres – with intrastate retail rates regulated by the states and wholesale interstate rates left unregulated until Congress passed the 1935 Federal Power Act (FPA). Though the *Attleboro* opinion was dubious even when released, the Court solidified the jurisdictional divide a few decades later, locking in a jurisdictional bright line that neither the Federal Energy Regulatory Commission (FERC) nor the states can change. As use of the grid has changed with distributed generation, demand response, and the need for a rapid shift to low-carbon resources,

jurisdictional disputes arising from the bright line hover over challenges to modernize the electric grid. Chapter 4, consequently, continues with how *Attleboro* continues to infect modern dialogues and why Congress' response in the FPA of closing the *Attleboro* regulatory gap has since triggered an animated dialogue over the act's crude structure for addressing today's challenges.

We show how the California energy crisis in 2000–1 resulted from design flaws in the state's newly "deregulated" power markets. To begin with, FERC failed to adequately control electric generators' market power in California's new wholesale power markets. At the same time, the state required its utilities to purchase most of their wholesale power through these inadequately regulated wholesale markets. The state also froze retail rates, leaving virtually no elasticity of demand. This flawed market design allowed generators and traders – such as Enron – to withhold generation from the market and drive up wholesale power prices, triggering rolling blackouts, utility insolvencies, large increases in retail rates, and ultimately the recall of Governor Gray Davis.

The next four chapters portray how the electric grid suffered from siloed consideration of events confronting the interstate flow of natural gas, oil production and imports, and coal use by the power sector. Chapter 5 reviews how the Supreme Court and Federal Power Commission decisions in the 1950s, 1960s, and 1970s regulating natural gas producers selling gas interstate resulted in the 1970s' natural gas shortages in the gas-consuming markets, as producers sold into more lucrative intrastate markets rather than the price-controlled interstate market. While this dynamic was well understood by the mid-1970s, it took Congress until roughly the end of the 1980s to remove all such wellhead price controls. We then describe, in Chapter 6, how the Arab oil embargo petroleum shortages and gasoline lines in the mid-1970s were exacerbated by uncoordinated federal regulatory policies. With the embargo, however, the consequences of the compartmentalized federal regulatory regime became painfully evident. US oil import dependence, and vulnerability to interruption of these imports, resulted in no small part from the interstate natural gas shortages that impelled utilities and industry to switch from gas to oil, from utility conversions from coal to oil (an inexpensive compliance option when faced with the newly enacted Clean Air Act), and from Nixon's price controls on oil that fostered increased petroleum consumption but decreased domestic production.

Chapters 7 and 8 follow by examining the history surrounding coal's rise to prominence in the energy sector as US oil and gas supplies became constricted. And it would be construction of new coal-fired power plants from the middle to late 1970s and onward that would dramatically change the composition of the electric grid, leading to increased health risks, acid rain, and escalating greenhouse gas emissions. Coal producers and utilities stubbornly resisting modern pollution controls on their coal power plants generally shoulder most of the blame for coal's resulting public health impacts. The reality, however, is slightly more complicated. Power plants that once burned coal and had switched to lower-sulfur oil were urged to convert back to coal. The 1978 Fuel Use Act, part of President Carter's National

Energy Plan, prohibited using oil and gas in most new power plants. The boom in coal-fired power and its public health consequences consequently followed from Carter administration decisions elevating coal to the principal fuel for electric generation. But, notably, this occurred with an appreciation for the health and environmental risks and yet without adequate assurance under the Clean Air Act that emissions from these plants would be controlled, leading to most likely thousands of premature deaths over a thirty-year period.

The first comprehensive energy statute, the 1975 Energy Policy and Conservation Act (EPCA), was enacted in response to the embargo. The act extended Nixon's oil price controls, arguably exacerbating our oil import vulnerability by decreasing petroleum production. But, more significantly, in the long term EPCA also established several major programs, including the strategic petroleum reserve and the corporate average fuel economy (CAFE) standards for automobiles and appliance efficiency standards – all with the objective of reducing energy use and the nation's vulnerability to future disruptions of oil supply. Carter's 1978 National Energy Act significantly advanced these objectives, and Chapter 9 examines how EPCA's CAFE standards for cars and light trucks (including SUVs) successfully increased new vehicle fuel economy and decreased petroleum use during CAFE's first decade. But, because of structural defects in the statute (the statutory limit of 27.5 miles per gallon on the standards for cars and the inability to deal with changes in the car-to-truck product mix) and low oil prices, the chapter adds how CAFE did little to increase fuel economy or decrease fuel consumption for the next twenty-five years.

Meddlesome decisions by courts, Congress, and federal agencies exemplify critical junctures where hubris produced follies. The following chapters, therefore, describe how they occurred, how policymakers struggled to deal with them over the years, and the extent to which they have been corrected. And many have in fact been successfully corrected. Others have become less pressing because of technological and market developments, such as the shale oil and gas revolution. After forty years, dysfunctional producer price controls on natural gas were finally eliminated. Oil price controls expired in 1981, after a decade of attempted regulation of the oil industry. The United States now enjoys sufficient oil in storage to tide it over a five-month total interruption in oil imports. And while Carter's coal policies were reversed in the 1980s, the Environmental Protection Agency (EPA) is still struggling to clean up the coal-fired power plants built during that era.

Yet, while many past energy follies have been corrected, considerable work remains. Whether or how the Trump administration will address climate change is an unfolding story – but all reports highlight the urgency for all nations, including the United States, to act swiftly and sufficiently if the earth's average rising temperature is to be capped at 2°C. To be sure, market forces here in the United States are driving utilities to shutter coal-fired power plants, and building any new plants (absent the commercialization of technology for capturing and storing carbon) is highly unlikely. Still, by 2075, 10 million Americans could be “substantially affected”

by climate change, according to a November 2017 Congressional Budget Office projection. The 2017 National Climate Assessment similarly warned how “[g]lobally annually averaged surface air temperature has increased by about 1.8°F (1.0°C) over the last 115 years (1901–2016). This period is now the warmest in the history of modern civilization,” with “[t]he last few years . . . [seeing] record-breaking, climate-related weather extremes, and the last three years . . . the warmest years on record for the globe.” Other 2017 reports caution that unless global use of coal for energy is eliminated by 2050, sea level rise will be dramatic – threatening coastal communities.

Our modern energy systems here and across the globe must evolve to meet this challenge. The internal combustion engine and the electric grid can no longer operate as they have in the past. Whether the path toward modernization will be retarded here in the United States by old relics from the 1920s and 1930s remains unclear. Chapter 10 therefore posits how the current legal and institutional framework for the energy industry must be modernized to deal with climate, volatile world oil markets, and a potentially decentralized energy delivery system. It summarizes some lessons gleaned from the last eleven decades of formulating energy law, regulation, and policy by Congress, courts, and federal agencies. The lessons, as they unfold in the following chapters, suggest

- **Avoiding Overly Prescriptive Statutes.** The long-term public health, climate, and acid rain consequences of the Carter coal program were in large measure attributable to the inflexibility of the Fuel Use Act and the grandfathering policy embedded in the Clean Air Act. In other examples, the inability of the CAFE program to increase fuel economy after 1985 was in part a result of a statutory limit on the relevant agency’s ability to increase the passenger car standard to above 27.5 miles per gallon (MPG). The agency’s unwillingness to aggressively increase the standards for pickups and SUVs also contributed to the post-1985 stall-out. And gasoline lines and oil import dependency were exacerbated by rigid price control and allocation requirements in the 1970s, including with the Emergency Petroleum Allocation Act. All these problems were attributable to prescriptive statutory provisions that denied agencies flexibility to correct mistakes and respond to changes in market conditions. For the next generation of energy and environmental policies to work, they must build in this necessary flexibility.
- **Giving Agencies Latitude to Do Their Jobs.** Courts, notwithstanding their protestations to the contrary, make important policy choices when deciding cases. It occurred when the Supreme Court held that Rhode Island could not establish a rate for the sale of electricity outside its borders. It occurred again with the gas producer regulation under the *Phillips* case. These choices sometimes substantially constrain agencies in carrying out their statutory responsibilities – leaving the agency with an unworkable program. Modern administrative law purports to give

a measure of deference to agencies in interpreting statutes they administer, but they occasionally are constrained because of Congress's lack of foresight. Courts ought to tread carefully in determining whether agencies must regulate (as in *Phillips*) or when they enjoy the power to regulate.

- **Responding Quickly to Flawed Regulations.** The California energy crisis of 2000–1 is an example of agency paralysis inflicting massive damage on the public. FERC's failure to promptly correct California market design flaws and rein in market manipulation led to blackouts, large rate increases, and utility insolvencies that prompt action could have avoided. Agencies must have the tools to make prompt course corrections in their regulatory programs and be willing to use those tools.
- **Coordinating Regulatory Programs.** One of the lessons of the Arab oil embargo's disruptions is that the cumulative impact of different agencies' regulatory programs requires careful attention and, ultimately, coordination within the executive branch. The California energy crisis provides similar instruction – failure of FERC and the state of California to work together exacerbated the effects of the crisis. FERC waited for the state to lift its retail rate freeze, and the state insisted that FERC reduce wholesale prices. Agency coordination is essential to successful energy policy outcomes.
- **Making Statutory Changes as Necessary.** As energy technology and markets develop and environmental needs and public health imperatives change, the statutory framework for energy and environmental law must change as well. Congress will need, in the vernacular, to get off its duff and legislate with clarity of purpose and yet without hubris of prescription, particularly on addressing climate change.

These lessons imbue the pages of the historic struggle of the United States to craft a national energy policy; they jump from the story of the follies along the way committed by Congress, courts, and the executive branch. With each new energy-related challenge, policymakers confront critical junctures that define a path forward – a path often then embedded in our economic fabric that later stimulates subsequent challenges. This, unfortunately, is our past. It has not necessarily served us well, and yet we seem to have learned little. Take, for instance, Department of Energy Secretary Perry's foray into energy policy when, as one of his first principal policy actions, the administration sought to prod FERC effectively into promoting coal and nuclear power plants under the guise of protecting the reliability of the electric grid. The reaction was swift – his initiative ignored the operation of the modern electric grid. It is imperative, therefore, that the lessons from each of the following chapters chronicling the evolution of federal energy policy are not lost on those who might naively or otherwise make similar mistakes, similar follies.