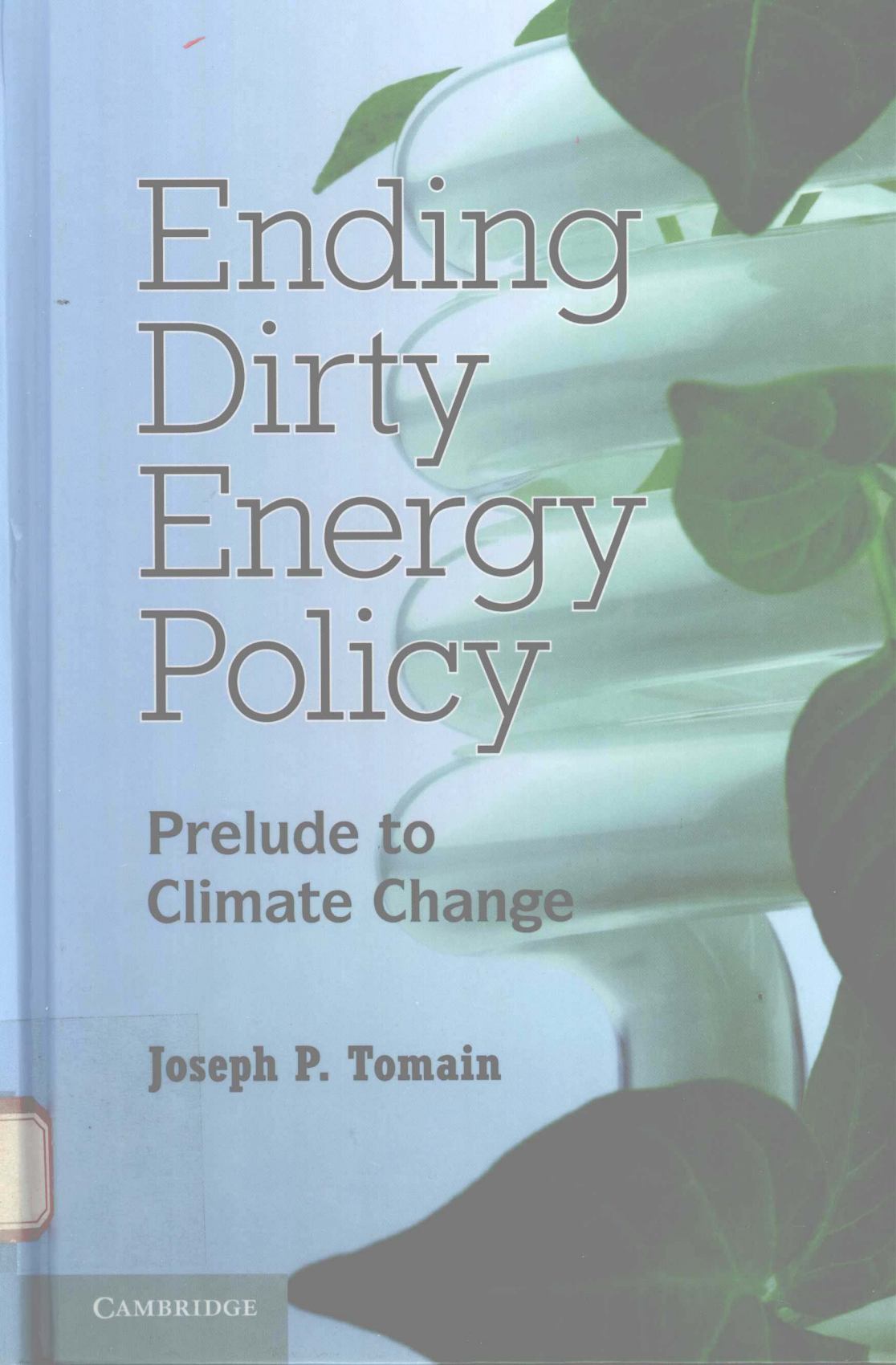

Ending Dirty Energy Policy

Prelude to Climate Change

Joseph P. Tomain

CAMBRIDGE

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ENDING DIRTY ENERGY POLICY

Climate change presents the United States, and the world, with regulatory problems of a magnitude, complexity, and scope unseen before. The United States, however, particularly after the midterm elections of 2010, lacks the political will necessary to aggressively address climate change. *Ending Dirty Energy Policy* argues that the country will not adequately address climate change until we transform our fossil fuel energy policy. Yet there are signs that the country will support the transformation of our country's century-old energy policy from one that is dependent on fossil fuels to a low-carbon energy portfolio. A transformative energy policy that favors energy efficiency and renewable resources can occur only after we have abandoned the traditional fossil fuel energy policy, have redesigned regulatory systems to open new markets and promote competition among new energy providers, and have stimulated private-sector commercial and venture capital investment in energy innovations that can be brought to commercial scale and marketability.

Joseph P. Tomain is Dean Emeritus and the Wilbert & Helen Ziegler Professor of Law at the University of Cincinnati Law School, which he joined in 1987 and where he held the deanship for fifteen years. He practiced general litigation in New Jersey before beginning his teaching career at Drake University School of Law. Dean Tomain has also held positions as visiting professor at the University of Texas Law School; distinguished visiting energy professor at Vermont Law School; visiting scholar in the program of liberal studies at the University of Notre Dame; visiting Fellow at Harris Manchester College, Oxford University; Fulbright senior specialist in law in Cambodia; and visiting environmental scholar at Lewis & Clark Law School. His most recent book is *Creon's Ghost: Law, Justice, and the Humanities* (2009).

Dean Tomain is chair of the board of KnowledgeWorks Education Foundation, founder and principal of the Justice Institute for the Legal Profession, and a board member of the Greater Cincinnati Foundation. He is also a Fellow of the American Bar Association, is actively involved with the ABA Section on Legal Education and Admissions to the Bar, and is a member of the American Law Institute. He has published widely in the field of energy law and policy.

To the students and teachers of
Christian Brothers Academy,
Lincroft, New Jersey,
from a member of the Class of 1966.

Preface

In both the *Apology* and the *Republic*, Plato has Socrates issue the Delphic command: "Know Thyself." Throughout the dialogues, Plato, for himself as well as for his teacher Socrates, issues another command: "Question everything." I had the great good fortune of attending Christian Brothers Academy, CBA to its devotees, in Lincroft, New Jersey, where both commands were embedded in our education. CBA was, and is today, an all-boys high school that offered a college prep curriculum and so much more. As I remember our second day of classes, our homeroom teacher, Brother Brian, rolled up the sleeves of his cassock, which always meant business, stared at us for a moment, then asked: "How many of you were taught by the nuns?" From where I sat, all hands were raised. He paused and then said: "Well forget everything they taught you."

Forget? What did Brother Brian mean? How could we forget? After all, we just graduated from primary school. And, isn't the purpose of education to remember all that we had learned? Was he simply taking a not-so-sly dig at the nuns? Was he otherwise preparing us for a different regimen of thought, a regimen taught by the Christian Brothers? Or did he have a deeper purpose? Was he challenging us to unlock the psychological mysteries of education, which, as revealed by Milan Kundera and Jorge Luis Borges, require memory *and* forgetting? Perhaps all of the above.

After his shot at the good sisters, there was a bit of nervous laughter in the classroom; these guys were pretty tough, and we were awfully young, so we were wary. Still, I felt that the message Brother Brian was delivering was crystal clear: "Question everything." Indeed, as we attempt to know ourselves, we should be prepared to question everything our new teachers were about to teach us as well; otherwise, they would have failed their central mission as teachers.

As a 14-year-old, I was unaware that Brother Brian's comment constituted the two Socratic commands. CBA was a laboratory of learning. It was, as the Persian scholar Avicenna said of libraries, a school of many rooms, and our core curriculum opened many doors to those many rooms. I dedicate this book to CBA because of the Socratic injunctions and because it was a high school that instilled in us all a great passion for learning through various guises. Brother Bernadine chastised us in French class for not knowing who Jean Paul Sartre was the day Sartre won the Nobel Prize in Literature. Brother John taught us advanced calculus and physics and Brother Andrew taught us advanced biology for no credits because these after-school classes were offered before Advanced Placement courses were invented. Brother John took us to Manhattan for a Federico Fellini film festival. Who knew that the reforms of Vatican II included *La Dolce Vita*? My education at CBA was decidedly not another brick in the wall. Hopefully, *Ending Dirty Energy Policy* is written in the spirit of Socratic inquiry and is, then, true to the spirit of CBA.

The book was written both at the University of Cincinnati and at Lewis and Clark School of Law. At Cincinnati, I bothered our librarians endlessly and thank them for their unstinting help. I thank Jan Smith, Lisa Britt Wernke, Alan Wheeler, Bill Kembelton, and Ron Jones especially for all of their help finding books and reports and keeping the technology working. I also owe special thanks to two classes of Cincinnati law students in my course *Energy Policy and Climate Change* for letting me test out the ideas of the book. I owe a special thanks to James Sproat and Christine Flanagan for their superb research assistance.

I also acknowledge with great appreciation the kindnesses shown to me by the faculty, students, and staff at Lewis and Clark School of Law where I was appointed the Visiting Distinguished Scholar of Environmental Law for the spring 2010 semester. Linda D'Agostino was immeasurably helpful in getting me oriented and guiding me through the university. Faculty members Melissa Powers and Chris Wold were particularly supportive as was Visiting Professor Francine Rochford, who had the unfortunate experience of having the office next door to me and hearing me either curse at the computer or talk about "the book" way too often. Thank you all.

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Introduction

Ending Dirty Energy Policy was completed while the stories and the federal investigations of the Upper Big Branch Mine disaster and the Deepwater Horizon offshore explosion, which appeared intent on killing the Gulf of Mexico, were unfolding. The corporations responsible for these tragedies, Massey Energy and BP, through their CEOs Don Blankenship and Tony Hayward, sadly exemplify the dominant energy policy of the United States: Fossil fuel profits are to be made at the expense of the safety and lives of workers and at the risk of catastrophic, sometimes irreversible, environmental degradation. This callous attitude cannot be blamed on corporations alone. The United States government served as partner to constructing a fossil fuel policy intent on bringing to market cheap and dirty energy. As consumers of cheap fossil fuels, we are complicit as well. The century-old, fossil-fuel-based U.S. energy policy must be transformed for a clean and economically healthy energy future.

The thesis of this book is straightforward. Regardless of one's position on climate change, traditional energy policy and its regulation must be dramatically reformed. In this way, energy policy transformation is a prelude to an effective climate change response. *Ending Dirty Energy Policy* proposes two dramatic changes. First, traditional energy policy with its fossil fuel favoritism must be rejected. Instead, new energy markets and new entrants that generate energy more cleanly through energy efficiency, and with renewable resources, must be promoted and supported. Second, the twentieth-century model of government regulation must also be rejected.[1] It has served its purpose and is now outdated because it is incompatible with many of today's problems, including energy policy and climate change. New market structures, new products, and new technologies require new, and in many instances dynamic, regulatory responses. Energy

regulation must move away from the narrow market correction model of the administrative state that has been in place since the last third of the nineteenth century.

An energy transition away from fossil fuels can be made today, just as a transition to fossil fuels from whale oil and wood occurred in the mid-nineteenth century. The story proceeds by first recognizing that economic markets, in this instance fossil fuel markets, do not exist independently of the political support structure that has built them and do not exist independently of the bureaucracy that sustains them. Therefore, in order to understand how a transition can proceed, it is necessary to understand how the traditional dominant energy policy came to be in the first instance. In Chapter 1, the regulatory history of fossil fuel energy policy will be described, and then the protectionist political and economic assumptions underlying it will be explained in Chapter 2. Understanding traditional policy assumptions helps reveal the necessary assumptions for a low-carbon energy future.

Chapter 3 goes on to describe the thinking behind a transformative energy policy. The elements underlying that policy are widely accepted today and form the basis of a consensus energy policy as explained in Chapter 4. After examining, in Chapters 5 and 6, how the transportation and electricity sectors of our energy economy can be transformed, the book concludes, in Chapters 7 through 9, with a discussion about new forms of energy regulation, a new politics of energy, and a set of strategies for accomplishing the transformation.

For the first two-thirds of the twentieth century, U.S. energy policy, and the assumptions on which it was based, largely served the country well. A national energy infrastructure has been built, the economy has expanded together with expanded energy production, and technological innovations have made all of our lives more comfortable. There has been a downside, though. As we enter the twenty-first century, we find that the infrastructure is aging; there is good reason to question the continuing correlation between an expanding economy and energy production; and pollution externalities threaten our health and comfort. There is a deep disconnection between the positive contributions of U.S. energy policy for most of the twentieth century and the problems and challenges of the twenty-first century. The disconnection is made all the more daunting by the political and regulatory support systems that have been constructed to further old energy policies and that now constitute major impediments to meaningful and effective policy change, as demonstrated by the congressional failure to enact serious energy policy/climate change legislation.

The legal rules, government institutions, and political alliances that sustain and support traditional energy policy present substantial barriers to a better energy future. For more than four decades, though, there have been voices warning about the folly of continuing down the old path and advising that change can be accomplished efficiently and consistently with the country's commitment to market values. "Said differently, adoption of a robust energy policy is the fastest and cheapest way to improve the economy, environment, health, and equity and increase security."[2] Fortunately, these voices are now being heard. Unfortunately, established institutions greatly weaken the impact of these voices. Consequently, the voices for a new energy policy must become louder, and they must be more clearly heard as we design an energy future built on new assumptions and supported by new institutions and by new forms of government regulation.

Our sharpened awareness of the need for a new energy policy is taking shape in no small part as a result of the challenges presented by climate change. The assumptions on which a better energy future can be based are relatively well known, and we have a fairly clear picture of the contours of a responsible energy policy. We can identify the essential variables for a new policy, and we can articulate a new set of policy objectives. The contours of the new institutions and the political paths to creating them, however, are less clear; yet they are beginning to emerge.

The Model of Government Regulation

Ending Dirty Energy Policy is an extended case study of the relationship between law, policy, and politics. The interaction of these three variables constitutes a model for the study of government regulation.[3] Each of these elements is essential. If one element is missing, then there can be no legitimate government regulation. By way of example, I argue that there is a consensus in society that we should change energy policy. The legal rules and institutions are in place that enable government to do so because we have been regulating energy since the latter part of the nineteenth century. I further argue that there is ample policy support for the proposition that an energy transformation to a low-carbon economy is necessary and affordable. Thus, the law and policy elements of the model are easily satisfied. However, it is equally clear, at the moment, that the political support to aggressively take on that transformation is lacking – fossil fuel catastrophes notwithstanding. Until political support for an energy transition is galvanized, government regulation will fall short. This book argues that bottom-up political support for a transition is building.

The legal element in this model of government regulation imposes two requirements. First, any legislative proposal must pass constitutional muster. Second, once a statute authorizes agency action, then that action must conform to the statutory authorization. Over the course of the last century, regulations and laws that have set prices, allocated resources, created an interstate infrastructure for the delivery and transportation of energy resources, and allowed for the correction of market failures such as monopoly and information asymmetries have all been held to be constitutional.[4] Inevitably, there will be legal challenges as legislation is passed to accomplish an energy transition. It can be expected, for example, that states, at times, will seek to preserve their rights against federal legislation. There have already been legal challenges to how the federal government allocates costs for infrastructure investment.[5] Nevertheless, the basic legal principles are well-established, and most challenges will address the application of those principles rather than their underlying constitutional legitimacy. In short, there is more than ample legal authority for a new energy policy.

The policy element is directed to the factual bases for legislation or regulation. Quite simply, the legal test is whether or not the reasons offered for either legislation or regulation are reasonably related to the ends that are pursued. In less stilted language, in support of a legislative or regulatory proposal, the proponent must assert that a reasonable set of scientific, technical, economic, or other data-based reasons exist for its enactment. If the government, for example, wishes to limit carbon dioxide emissions, then the reasons for the limitations and limits it suggests must be reasonable. Although policy is often contestable, this book will demonstrate that the policy arguments behind an energy transition are not only sound, they are well supported by data and are generally accepted as reasonable.

Finally, the political element of the model is clearly the most contentious. The politics of energy have a long history behind them. Additionally, the politics of energy have trillions of investment dollars behind them. Further, the partnership between the fossil fuel industry and government regulation is deeply entrenched in the political and economic marketplaces. A full energy transition will only be possible once that partnership is renegotiated so that low-carbon producers become the dominant energy providers and consumers realize greater choice and value.

Overcoming Barriers to an Energy Transition

One consequence of having a century-old energy policy is that transition is difficult. Moving from a fossil fuel economy to a low-carbon energy

economy is made particularly difficult by three substantial barriers to change. The first barrier is that government regulation has been based on a fatally defective theory of markets. Second, industrial and bureaucratic incumbency favors old ways of doing business and favors old actors. Third, energy policy transformation, as well as climate change, present regulatory problems that are different in kind than most of the regulatory problems the government confronted in the past. A successful transition, then, requires us to rethink our theory of markets, break down the advantages of incumbency, and bring new thinking to future forms of regulation.

Theory of Markets and Their Regulation

Whether we refer to the governmental structure of the United States as a form of democratic capitalism or as a liberal democracy, the relationship between state and market is the same. Markets are seen as the most desirable form of social ordering because markets have their virtues. Markets can create wealth, stimulate innovation, and efficiently distribute resources – in theory. In practice, markets have been subject to control by special interests who have successfully garnered government favors, thus distorting markets by reducing competition. There is nothing particularly shocking about this idea; it is as old as the Founding. After all, politics is about who gets what.

What is troublesome about a strong commitment to markets is that such a commitment is too narrow. Markets do achieve their virtues when they are competitive. Markets, however, are often imperfect, and those imperfections can often be fixed through government regulation. A theory of government regulation, though, that limits itself to fixing markets is too narrow and ignores other matters of social importance such as the fair distribution of wealth and power and the long-term construction of a better society.

Government regulation throughout the twentieth century was based on the *ex post* fixing of markets when they were broken. Market fixes, in turn, were justified with arguments from efficiency. To be sure, we continue to experience market failures, but we must respond to them differently for two reasons. First, for the last half-century the very idea of "the market" has been corrupted and politicized in ways that have distorted the role of government in general, and energy and environmental policy in particular.[6] Second, and more importantly, the energy and environmental problems we face (climate change is the paradigmatic example) are structurally different from the types of market imperfections we have historically addressed. Twenty-first-century regulation must look *ex ante*, must anticipate problems, and must act pragmatically and responsively to construct a better society justified on principles of equity and fairness as well as efficiency.

Thus, the market failure model of the past is too narrowly focused, favors a limited number of incumbent actors, misdirects resources, and cannot effectively respond to today's economic and environmental challenges.

The Power of Incumbency

Traditional energy policy has erected roadblocks for new energy policy and has impeded the entry of new energy actors. Traditional energy policy not only favors fossil fuel firms, it also has created a regulatory mindset that privileges short-term economic growth over long-term environmental protection and rewards business leaders, investors, and government regulators for sticking to the old path.[7] In no small part, this narrow focus is reinforced by the bounded rationality of decision makers; the path dependency of their previous investments; and generally in a regulatory psychology of bureaucratic inertia, at least, and regulatory capture, at worst.[8] In short, the pull of tradition is not irrational. It is also not optimal.

The demand of shareholders and credit markets for quarterly profit and loss statements necessitates that business leaders not only look to their bottom lines but also look for immediate gains. This financial focus is understandable, but it is not at all realistic to continue to focus on old dirty industries while ignoring emerging technologies and new energy providers and strategies. Incumbents may appear to be safe investment bets, but incumbency alone is not safe enough – witness the U.S. automobile industry over the past thirty years and the necessity of the 2009 bailout.

The institutional constraints on markets that demand quarterly returns on investments affect regulators as well. Government regulators, particularly political appointees, may not have quarterly demands placed on them, but their time horizons do not exceed two- or four-year election cycles. Again, this short-term focus is understandable because, like all organizations, government agencies operate under constraints. Information problems, for example, abound. Given the magnitude of designing an energy policy for any one sector demands accurate information, and in the dynamic and contentious field of energy, information is difficult to come by. Regulators work closely with their regulatees and must, often by necessity, look to industry for its data. Government agencies are constrained by limited staffs and budgets, by significant caseloads, and by the changing winds of politics. Consequently, regulators focus on the here and now, not on some hypothetical future. The current structure of administrative agencies reinforces a narrow industry focus additionally because both the regulators and the regulatees have a certain sympathetic understanding of one another's job assignments.

Institutional inertia is unacceptable. Narrowly focused, short-term thinking, and the reluctance to change, must be resisted if the country is to enjoy a healthier environment and a more vibrant economy. Incumbency, then, constitutes a significant barrier to change. Incumbency in the economic marketplace places a demand on investors for a return on those investments. Incumbency in the political marketplace places a demand on bureaucrats to conform to the political temper of the times, which too often looks backward for financial support rather than forward to challenging old ways. Yet a deeper problem exists. Transforming energy policy or responding to climate change are problems that are categorically different from the types of regulatory problems we have addressed in the past.

Twenty-First-Century Regulatory Challenges

Both energy policy and climate change are extraordinarily difficult and categorically different from standard regulatory issues.[9] Standard regulatory problems are discrete; their costs and benefits are reasonably determinable; and they are often susceptible to technical fixes. Traditional regulatory responses will not solve the problems of energy policy transition or climate change, because both are: (a) complex and not discrete; (b) not open to short-term, simple solutions; and (c) the costs and benefits are highly contested and, not infrequently, incommensurable. If we examine these problems more closely, we find that they contain a series of problems of cascading uncertainties. These uncertainties involve spatial, temporal, interdisciplinary, technical, economic, scientific, geographical, and jurisdictional dimensions. Is the earth warming? Is there a human contribution to warming? Do we risk catastrophe by doing nothing? Can we have an energy economy without coal or oil? What are the costs of transition? What are the costs of doing nothing? What are the benefits? What steps should we take? Will those steps be effective? Is it possible for government to change energy policy comprehensively? Can government sustain the necessary political will to address a problem that will outlive us all? And so many, many more.

The need for decision making in the face of uncertainty is not new, although energy policy and climate change are orders of magnitude greater than the run-of-the-mill regulatory issue. The proper path to finding solutions amid a host of uncertainties is unclear and is susceptible of being obscured by a tendentious politics that attempts to sabotage hard science and sound policy.

The multi-faceted dimensions of such large and complex problems can lead to stasis. Why act in the face of so many unknowables? As individuals,

is the problem too big to comprehend and too invisible to appreciate? As a society, how can any institution, public or private, come to grips with problems as long-term and as multi-dimensional as an energy transition and climate change? Can we respond to "Giddens' Paradox?" It states that the dangers of global warming may not appear tangible, immediate, or visible in our day-to-day lives, therefore, we can choose to do nothing concrete; yet, if we wait until these problems are visible and acute, then action may be too costly and too late.[10] Inaction is always an option, but it is not a wise one and must be resisted.

Energy policy and climate change are paradigmatic of other contemporary problems such as health care, public education, and financial markets for which there are no quick fixes or one-shot solutions. Instead, these issues require a re-envisioning of government regulation in which we no longer retreat to the Reaganesque slogan that government is not the solution, it is the problem. Government must be seen as an active participant in generating broad-scale, creative responses to such vexing social and economic problems. If we are to have any hope for even a partially responsive solution, we need a new environmentally sensitive energy policy and we need a new regulatory regime.[11]

The United States will neither serve its domestic agenda nor serve as a world leader for climate change initiatives until our traditional fossil fuel energy policy is transformed into one that acknowledges environmental costs and capitalizes on the economic opportunities available in moving away from a traditional policy to a smart one. *Ending Dirty Energy Policy* argues, not only that an energy policy transition is necessary for any effective climate change response, but that an energy policy transition is good in and of itself. Whereas climate change and smart energy policy are complementary regulatory initiatives, this book concentrates on transforming energy policy. A transformed energy policy will take us away from old habits of fossil fuel favoritism and will lead us toward a new competitive and innovative energy portfolio.

Energy and Climate Change Observations

One can accept the science behind the Earth's warming and even accept, as scientifically sound, the anthropogenic contribution to warming.[12] Still, one might be forgiven any skepticism about questioning whether any response is economically feasible.[13] There is not a high degree of comfort, let alone a guarantee, that a response will necessarily be economically efficient or even energy efficient. And yet, what alternatives exist? Can we

wait and see? Or as Judge Richard Posner writes, we can ignore the threat of climate change to our peril.[14]

Ending Dirty Energy Policy can be read as an agnostic text insofar as the book does not concentrate on the fears associated with melting ice caps, the spread of arid farmland with its attendant displacement of the world's poor, or the possible extinction of hundreds of species. Nor does the book extol the benefits of a warmer climate for some parts of the globe or the human inevitability of mitigation through migration. Issues, pro and con, surrounding climate change are addressed in other precincts. Still, without a new energy policy we cannot adequately address climate change. The complementary assertion is that a new energy policy is a valuable public good.

Throughout this book, significant amounts of data are presented, but they should not be overwhelming. Instead, the data should be read as signaling the direction and magnitude of change. In brief, there are only a handful of data points that set the context for a discussion of energy policy. The first data point is the current situation of the electricity and transportation sectors of our energy economy. Electricity accounts for 60 percent of the energy produced and consumed in this country and oil accounts for the other 40 percent. At the moment, these sectors operate almost exclusively independently of one another. Very little oil is used to generate electricity, and very little electricity is used to move cars. That situation will have to change.

The second data point concerns the fuel mix for electricity generation. Roughly 50 percent of all electricity is generated by coal, followed by 20 percent generated by natural gas, then 20 percent generated by nuclear power. Renewable resources, including hydropower, constitute about 7 percent of the electricity generated with less than 1 percent generated by solar or wind power. That situation too must change.

The third data point necessary to understand the current situation is that 85 percent of our energy is fossil fuel based and 10 percent is based on nuclear power. The traditional energy path of large-scale, highly centralized, capital-intensive, and largely fossil fuel firms control the energy market. The consequence of such a large market share, then, should be obvious. A transition away from the traditional path necessarily means that economic and political incumbents must face more competition and the loss of market share. Change has its costs.

The Deepwater Horizon disaster captivated the country in 2010. It was impossible to watch the online video of tens of thousands, if not hundreds of thousands, of barrels of oil a day and associated methane gas being