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Energy Policy in the U.S.

Politics, Challenges, and Prospects for Change

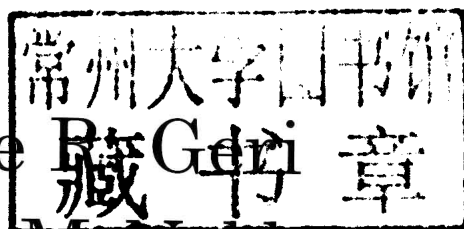


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Preface

This book is about the policies and policy-forming processes that our governments—federal, state, and local—have taken, are taking, and are proposing to take in their efforts to reach the elusive goal of energy independence. The object of the book is to bring to light some of the difficulties that constrain governments' efforts to forge energy policy—and to stick with it once it is formed.

The task of framing an energy policy for the country involves balancing the national and international concerns of conservation, economic growth, greater efficiency in the use of energy, and promoting invention and innovation in both existing and new energy resources. An additional goal of energy policy today is continual improvement in the security of domestic and international energy resources and distribution infrastructure.

For many Americans, true security for the nation and its vital energy supplies will occur only when we have eliminated our dependence upon other countries for our energy supplies. For many others, however, the goal of energy independence is an unrealistic dream—a chimera that obscures the fact that international trading in energy is always going to exist and, therefore, should be adjusted to result in greater advantage for the United States. Of course, that is the nature of public policy making; for every position there are one or more alternative proposed solutions.

Just as it is not proscriptive, neither is this book prescriptive; it does not point fingers, demand program revisions, or offer panaceas. Easy answers to the problems of energy and energy policy simply do not exist. There are just too many options and too many barriers, none of which can readily result in enough reliable, affordable, dependable, clean energy to erase our need to import a significant proportion of our energy supplies. Instead, this is a book that describes the efforts that clear-headed and farsighted men and women in government, industry, and private life are taking to address the interrelated issues of energy, climate warming, and public policy.

Why Worry about Energy?

This book has three goals. First, it recognizes that regardless of what some people would have you believe, there are *no* viable immediate or even short-term solutions to the problem of our dependence upon foreign oil. To the contrary: achieving energy independence may not be possible for 50 years or longer, if then. Second, the Obama administration's early published energy policies warn that the process will indeed require a commitment to long-range objectives and programs, many of which require significant investment in research before they can be implemented. Third, the U.S. Department of Energy uses the target date of 2030 in many of its studies. This apparently allows sufficient time for the department's research and development proposals and programs to

come to fruition and to begin to make an impact on our reliance on foreign energy supplies. We believe this is too long a wait.

Just because there are no short-term solutions to the dependence on foreign sources of energy, this does not mean to suggest that we can afford to stop trying to get a better handle on our energy problems. There are many things that can and should be done now to ease the immediate problems and possibly contribute to longer-term solutions. We must remember, however, that there is no excuse for not doing all we can to conserve energy and to make better use of the energy resources we now have. Developing and sticking to a comprehensive energy policy is the first step in resolving our energy problems.

The Obama/Biden energy plan described in campaign material released in 2008 identified a long list of short-, medium-, and long-term energy and environment-related objectives and identified high-minded-sounding programs that the new administration would work to implement. Believing that all of these can be accomplished in the time periods suggested requires a big leap of faith. Early progress suggests that many of the energy goals and objectives may have to be shelved while the administration's attention remains focused on economic issues. A review of some prior energy policy initiatives is included in the next chapter in order to emphasize the difficulties that must be expected and overcome in forming an energy policy.

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We wish also to thank the faculty, staff, and administration of Pacific Lutheran University and The Evergreen State College for their generous support for this and other research efforts over the years. Pacific Lutheran University and its School of Business Administration, which continues to endorse the unofficial research professor activities of Dr. McNabb by providing access to facilities and staff. Without that support and encouragement, this book could not have been written.

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Introduction

Today we are hooked for better or worse, not only on coal but also on oil and gas and vulnerable to twin threats—uncertain supplies and the danger of potentially irreversible changes not just in regional but also in global climate induced by emissions of the products of those fuels, most notably the greenhouse agent carbon dioxide.

—Michael B. McElroy, 2010

Why another book on energy? Energy policy is perhaps the most Janus-faced of all the policy arenas in American politics. One face is in shadow: when supplies of crude oil, gasoline, natural gas, coal, and electricity are abundant and cheap, energy policy is generally off the agenda. When supplies tighten, costs increase, or the effects of our profligate energy use become too great to bear, people clamor for relief. Suddenly the second face is in full sun, and discussion begins on policies that are ordinarily obscure and ignored.

As we write, there is a strengthening consensus that global climate change is occurring and that it is influenced by human activities, particularly the burning of fossil fuels such as oil, coal, and natural gas. The recognition that such anthropogenic climate change could have disastrous and irreversible effects on Earth's biosphere has again placed an uncomfortable spotlight on energy systems in the United States as well as the government policies that have influenced and supported those systems. In his 2010 book on energy, Harvard professor Michael McElroy added that in dealing with the twin threats resulting from fossil fuel use the United States must adopt an energy policy "in a world where the human population has never been greater, where distances have contracted, and where an ever-greater number of people aspire legitimately (and often forcefully) to share the benefits of the good life" (McElroy 2010, 71).

Our public policies in the energy arena and the social, economic, and environmental practices they support have led us to this point. In many respects these policies have been successful. Since the infamous energy crisis and oil embargo of the late 1970s, we have had generally stable supplies of the energy sources we need, at affordable prices. But again, there is a second, less benign face to the story. Our fossil-fueled civilization also generates high environmental costs to our air, water, and land, and not all share in its benefits. The United States continues to use nearly one-quarter of the globe's yearly oil supply (19 million barrels per day [mbd], of total global production of 87 mbd), while a quarter of the world's population, about 1.6 billion people still lack access to electricity (United Nations Development Program [UNDP] 2009).

Although mountains of books have been written about various aspects of energy, they tend to treat energy policy as an afterthought. Governments worldwide, including the U.S. government, intervene in energy markets in a variety of ways. They provide financial incentives and regulations

that encourage production of preferred energy sources, limit consumption, subsidize use by individuals, or try to influence the behavior of firms and individuals to encourage efficiency and limit pollution. These policies are the details of a country's national energy strategy, its overall approach to obtaining the energy resources needed to sustain its infrastructure and civilization.

Our intent in this book is to focus on those policies: to provide an overview of the important energy policies in the United States, including their history, goals and objectives, methods of action—how, exactly, do they achieve their intended results—and consequences, both intended and unintended. With an improved understanding of these past and current policies, we believe that individuals and policy makers will be in a better position to create and implement new policies more appropriate to the goal of limiting the advance of global climate change.

What Is Energy?

One of the ironies of work in this policy arena is that there is no generally agreed upon definition of exactly what energy is! It is a slippery, indefinable concept grounded in the hard sciences of physics and chemistry. Thus, energy has been defined as “the capacity to do work,” or (better) “the ability to transform a system” (Smil 2008, 13). We tend to associate the concept with particular sources of energy (oil, natural gas, uranium), which through various types of conversions (particularly burning or oxidation) produce secondary products, effects, or services that we value. The critical insight is that such sources have little intrinsic value; we value them because of what they can do for us, the services they can provide.

Americans treasure individual *mobility*—oil, fractured into gasoline, just happens to be the substance that best enables such transportation (although, as we shall see, at shockingly low levels of efficiency). We need energy to cook our meals, heat and light our homes and offices, and fuel the manufacturing and services that run our economy.

Public policy impacts all of these conversions, and thus helps to shape the choices available to us. These policies reflect decisions about what kind of society we want and what we are willing to do (or put up with) to have access to the services that energy provides. For example, we take gasoline-powered individual transport for granted. But behind each fill-up of your car lies a complex web of subsidies and regulations influencing petroleum production, refining, transport, car manufacturing, driving, and urban planning, as well as a degree of willful blindness on the part of the driving public (see Chapters 4 and 7 for more details). Each year around 40,000 people die in traffic accidents in the United States and gasoline explosions are surprisingly common.

The availability of cheap energy is part of the American self-image. It powers our big houses, cars, and SUVs, and any change in energy policy that meddles with that formula is likely to have a short half-life. Yet the risks associated with climate change are too great to make inaction acceptable.

Structure of the Energy Industry

To understand energy policy in the United States, it is necessary to be thoroughly conversant with the many different institutions and organizations that make up the energy industry. Regardless of the particular product or service, the energy industry is composed of four fundamental components; three are economic; one is political. The economic institutions include the firms involved in the production, shipping or transmission, and retail distribution of energy products. Governments constitute the political and regulatory arm of the industry.

The production methods of energy resources are remarkably similar. Oil, the single greatest source of energy in the United States, accounting for some 86 percent of all energy consumed, is pumped from underground pools by wells sunk on public and private land and from offshore platforms. Natural gas is also collected at wells, often as a by-product of petroleum production. Coal and its derivatives, such as oil sands and shale, are mined from either underground seams or extracted from surfaced deposits, again from both public and private lands.

For electricity, production means power generation. Electrical energy is generated by falling water in hydroelectric systems, by steam-powered turbines using fossil fuel, geothermal energy, by nuclear power, wind-power generators, or by gas turbines fired by natural gas, methane, or propane. A very small number of turbines are fueled by the combustion of biomass products.

Transmission is also similar for all three energy supplies. Electric power is moved over high-voltage transmission lines; gas is transported by large-volume pipelines; oil is pumped through pipelines or moved by truck, oceangoing ships, or river barges; coal is moved by truck, and increasingly by special, dedicated railcar from mines to where it is needed for industrial use and for generating electricity.

Distribution of energy supplies to end users is less similar than production and transmission systems. Electric power is distributed over low-voltage overhead or underground power lines to local public or private utilities that distribute power to homes and businesses, and provide power for street lighting and for a declining number of public transit systems. Gas and petroleum products are distributed via underground pipe networks to local collection and storage facilities (*tank farms*), and then distributed to local distribution points by over-the-road vehicles. Gas utilities distribute via underground pipes in ways similar to electricity utilities. Petroleum products, including heating oil, are distributed at company or independent gasoline outlets and distribution systems.

Governments play a large and varied role in the energy industry, one that ranges from leasing extraction rights on public lands to private companies to wholesale and retail price controls at the consumption end of the cycle. The federal government, the states, and some large local municipalities have diverse responsibilities in the production, distribution, and consumption of energy. First, they are large consumers of all energy products. Second, they control access to energy resources. Third, they set prices and mandate adherence to environmental regulations in all phases of energy production and distribution.

Stakeholders in the Energy Policy Network

This book examines elements of the energy policy question as it affects and is affected by the four interrelated institutions that make up the industry: *energy prime movers*, *energy industry shapers*, *energy users*, and *energy regulators*. The prime movers in the energy industry include all the public and private producers and distributors of energy resources. Industry shapers include the financial, research, social, and supporting organizations that facilitate the movement of energy from producers to users. Enron was one of the more disreputable organizations in the group.

Energy users include the consumer, commercial, industrial, and governmental organizations that purchase and consume energy in all its forms. Industry regulators include the international, federal, state, and local government agencies that regulate some or all aspects of energy supply and demand.

Together, these institutions make up the energy policy network (Rhodes 2006). The players in the network include the president, elected members of the House and Senate, congressional staff members, administrators in government agencies such as the Departments of Energy, the Interior, and Agriculture, members of citizen, environmental, and business interest groups, and

research organizations such as the Rand Corporation. Some of these organizations—the insiders—have close relationships with elected and appointed government institutions, whereas others may be outsiders and restricted in their ability to participate in the policy framing process (Hajer and Laws 2006). Insiders are called upon to supply background information and regularly testify before legislative committees. They often help prepare proposed legislation, standards, and regulations. Government policy makers see these insiders as responsible in their requests, willing to compromise when necessary, and always ready to cooperate with agency planners and policy makers. Government needs these organizations in order to achieve its policy objectives.

The individual organizations within each of these institutions have diverse and often diametrically opposed goals and objectives compared with other organizations within and outside of the institutional class to which they belong. Within the context of this discussion, those goals and objectives can be expressed as policy-making *priorities* that make up their tool chest of potentially negotiable concepts. In addition to these priorities, each organization must find satisfactory answers to questions that are particularly relevant to their segment in the industry, their organization, and their individual constituents. Together, these priorities and questions function as the *position framework* within which policy negotiations will take place. Typical of the types of questions that no negotiator would be likely to forget to have answered during a policy negotiation are:

1. What's in this policy proposal for us?
2. How much is the policy going to disrupt the status quo?
3. Who does this policy hurt and who does it help?
4. What compromises or losses will the proposal require of my group?
5. Who is going to pay for the changes or required actions?
6. How much is this proposal going to cost our members?
7. What long-term benefits can we expect to offset those costs?
8. How long can we expect this policy direction to be in effect? Can we afford to ignore it?
9. How can we be sure that our position gets a fair hearing and is not ignored in the final policy?
10. How long will it be before we really run out of oil and gasoline, and what changes will we be required to make?
11. How can we best be prepared for the day when our members can no longer afford to pay for fuels?
12. How will environmental requirements hurt my group? Who will pay for our losses?
13. How will global warming really affect my members? What can we do to alleviate any damage?
14. When is the government going to get serious about requiring us to use alternative fuels?

These and other, related issues are high on the executive and legislative policy agendas. In addition, readers will have their own list of questions pertaining to issues particularly related to their organizations. While it is not possible in this book to answer each of these questions for each of the four energy industry institutions or for any one or two organizations or groups within any one institution, they are part of the concept framework within which policy considerations for the industry sectors contained in the discussion that follows this section of the book.

While the focus of this book is on energy policy and the policy process, it is important to remember that energy issues have great impact on the economic and quality of life of everyone. At the one end of the issue spectrum are propositions affecting stakeholders such as the families

whose only source of heat for cooking are twigs and dried dung. Soot from their cooking fires is seen as contributing to the melting of glaciers in the Himalayas. A priority here is to provide families with more efficient cooking stoves (Rosenthal 2009).

At the other end of the issue spectrum are factors such as the burning of fossil fuels in industrial nations to generate electricity and power motor vehicles. This is considered by many as the greatest single cause of air pollution and contributor of greenhouse gases, which are the cause of global warming. Requiring more fuel-efficient motor vehicles is a priority at this level. Doing so results in higher costs to consumers. Another is requiring more ethanol as a motor fuel. This drives up the cost of food and cuts into already limited food supplies. Burning coal to produce electricity is a major cause of acid rain and air pollution. The list of costs and benefits goes on and on. And that's why a comprehensive energy policy is so important to the nation and the world.

What Actions Should We Take?

But what kinds of action are needed? Tim Flannery's otherwise excellent 2005 book on climate change, *The Weathermakers*, ends disappointingly with a "Climate Change Checklist" of eleven individual and household actions such as installing solar panels and buying energy efficient light bulbs (Flannery 2005, 316). But though individual action to change patterns of energy use will be necessary and helpful—it will not be *sufficient* to slow climate change. Most studies of energy and climate change are skeptical about the usefulness of ad hoc, individual changes in consumption to climate change action. It is difficult, although certainly not impossible, for individuals to change their energy habits appreciably in the short run.

Autos and homes are medium- to long-term investments, and are linked to career, job, and lifestyle choices that many Americans find difficult to change quickly. Although high gasoline prices spurred a surprising shift to mass transit in 2008, it is not clear how long that shift would last. Even more challenging is the fact that the impacts of climate change are long term, while the costs to prevent it are incurred now. And the impacts of our choices are difficult to see: the 19 pounds of carbon dioxide emitted when we burn a gallon of gasoline in our cars are invisible.

A major impediment to transformational change in the energy sector is that these policies will inevitably be framed by some stakeholders as a large and expensive dose of bitter medicine. The argument: a decreased reliance on fossil fuels will raise energy costs, lower our living standards, increase costs for businesses, and make U.S. products uncompetitive, wrecking our economy. This narrative links easily to the strong antitax sentiment in the United States and it is likely that any attempt to raise the price of carbon will be portrayed as a tax increase.

Further complicating matters is the wildly uneven tone of the debate on energy and energy futures. As Chapter 1 will discuss, the history of prediction in the energy arena is a sorry one. This should encourage authors on this topic to approach it with caution and humility, but alas, sensationalism attracts attention. So on one end of the continuum, there are jeremiads such as James Howard Kunstler's *The Long Emergency* (2005), anticipating the Decline of Civilization as We Know It, and at the other, techno-utopian descriptions such as William Tucker's *Terrestrial Energy: How Nuclear Energy Will Lead the Green Revolution and End America's Energy Odyssey* (2008).

The mainstream media have generally, in our view, tried to apply strong standards of journalism to the complex story of climate change and the role of energy, but the blogosphere, not surprisingly, flows from one extreme to the other. This can leave both the average citizen, and policy makers, bewildered by the cacophony of these *nattering nabobs of negawatts* (apologies to the late William Safire).

The challenge for change agents in the energy sector is to both rebut the gloomy predictions and present an appealing, yet realistic vision for a transformed energy sector in the United States. Fortunately, as Chapter 2 will discuss, the dire predictions are largely off the mark; most estimates of the costs of comprehensive strategies to reduce greenhouse gas emissions are around 1 percent of gross domestic product (GDP). And the effects of such strategies need not be dire. Other countries with a level of social and economic development equal to ours use considerably less energy, and despite our size and climate and autophilic ways, we can do so as well.

As will be discussed in Chapters 1 and 2, we believe that long-lasting changes to the energy sector must be systemic, not ad hoc. Our society cannot avoid the need to take collective action against the challenge of climate change, and that means changing energy policies that are now not only outmoded, but counterproductive. Such collective action runs against the grain of U.S. society's individualist self-image. It will also require confronting institutions (businesses, unions, regions) that have benefited from decades of substantial government support, in a country where our dominant energy policy strategy could be described as, "it's the supply, stupid." What policies do we need, and how do we enact them in such a complex and turbulent policy environment? This book will attempt to answer these questions.

Before launching into our overview of past and present U.S. energy policies, it is essential for the reader to have a basic understanding of the concepts and terminology used in energy analysis, and a grasp of the current patterns of energy use in the country. Since the most ubiquitous form of energy in our daily lives—electricity—is also one of the most poorly understood, we'll begin with a case study of the fascinating chain of events that puts the power of the electron at your disposal.

Purpose for the Book

Our purpose for writing this book was to provide a greater awareness of the policy decisions that America's elected and appointed officials must make if we are ever to successfully move the country away from its dangerous and costly dependence upon foreign energy sources—or even if trying to accomplish that goal is the right one for America. Despite the fact that our energy policy affects every aspect of the national economy and the daily lives of all Americans, our political leaders have still not been able to stick to one sustainable policy path; billions spent by one administration have been ignored by the next.

The country has been in an on-again, off-again drive for energy independence for more than forty years, and it looks as if we are no better off today than we were when the drive began in the 1970s. Achieving energy independence has been, in the words of former President Jimmy Carter, the "moral equivalent of war." This has not been a conventional war involving guns, ships, and aircraft, although at times violence clearly related to energy resources has broken out or is just under the very fragile surface calm. Rather, it is more akin to a quest which, at times, has included the overtones of a Crusade (Revkin, 2010).

While the focus of this book is on *energy* policy, crafting a sustainable energy policy cannot be achieved without including an analysis of *environmental* policy. On one hand, a major reliability and security-related energy policy proposal on the 2010 political agenda is to shift the millions of automobiles and trucks now powered by fossil fuels to electric power. This will require major expansion of the electricity generation, transmission, and distribution infrastructure. However, most electricity is produced in very large coal-burning generating plants.

The burning of coal to generate electric power is this country's greatest single cause of air pollution and contributor to greenhouse gases and global warming. Even so, there are groups who want

to remove many existing hydroelectric dams, forbid construction of any new nuclear power-generating plants, and replace millions of existing vehicles with new electrically powered automobiles. What seems to be forgotten is the fact that the nation's electricity grid is in many locations already at maximum capacity, and its facilities are obsolete and badly in need of the investment of billions of dollars in new generation, transmission, and distribution infrastructure.

Why an Energy Policy Is Important

America needs a comprehensive energy policy for a number of reasons; in addition to resolving the confusion over energy that reemerges with every new administration and every swing in energy prices, two others stand out. First, it is a fact that the globe faces a growing shortage of nonrenewable energy resources (oil and gas, but not coal). People disagree over the length of time before we run out of affordable fossil fuels, but they agree that global demand for energy has been far outpacing new sources of supply. In the United States, this has increased our reliance upon a few foreign suppliers for fossil fuel supplies. Political leaders describe this dependence as not only representing a threat to the economy and our way of life, but also as a threat to our national security. Second, the continued burning of fossil fuels, particularly petroleum products and coal, are poisoning the environment and contributing significantly to global warming through the emission of carbon dioxide and other greenhouse gases, light-absorbing particulates (black carbon), and ozone-creating gases. A collaborative and sustainable approach to energy and environmental policy is clearly long overdue.

Energy and Economic Growth

Policy makers press for energy independence because economic growth requires a sufficient, stable supply of clean energy resources. When the nation is dependent upon other countries for much of its energy supply, the health of our economy and the nation's security are at risk. Thus, the energy policies now in effect and new models underway in Washington, DC and state capitals, affect the air we breathe, the food we consume, and power the businesses and industries that produce the safety and quality of life we have grown to expect. This is also why we need a comprehensive and coordinated energy policy, *not just an energy bill here, an energy bill there, with little or no all-fuels integration*. But, as this book will reveal, coming up with a comprehensive energy policy is not a simple task. It has not happened often. And, when it has, all too soon, policy makers have seen fit to change the direction and focus of that policy.

For most of the history of the United States we did not have a comprehensive, coordinated national energy policy. Until the late 1970s, energy policy was centered in a variety of government agencies. Moreover, until that historic decade, the problem was not having enough energy, but how to handle the energy surplus with which the nation was blessed. Abundant supplies of fossil fuels made it possible for America to become the world's most powerful industrialized nation.

For most of her modern history, America was a net exporter of oil and coal. At the same time, control of energy matters historically remained divided among the individual states and the federal government. Also, a large portion of our energy resources are found on public lands, which were controlled by the Department of the Interior and various other federal agencies, including the Department of Indian Affairs.

Energy Policy and Public Opinion

Public policy is the plan of action that guides a government or its agencies in actions dealing with issues of public concern (Cochran, Mayer, Carr, and Cayer 1996, 1). Public policy shapes—and is in turn shaped by—the laws enacted by federal, state, and local executive and legislative actors. However, in democratic societies, public policy is increasingly shaped by public opinion. Goodin, Rein, and Moran (2006) consider public opinion to be one of the key elements in policy. Unless the public supports a policy, it will not succeed, regardless of the political power held by its policy makers. These factors are elements in the analytic framework that is followed while we examine how energy policy is shaped and who does the shaping.

The greater the importance of a policy to the various stakeholders in an issue, the stronger is the relationship between public policy and public opinion. Actions by special interest groups and economic groups increase the potential threat for influencing or changing public policy (Burstein 2003). However, the right of all citizens, our companies, organizations, and our political institutions to be involved in forging energy policy too often makes achieving a policy goal problematic in the extreme. Without a commitment to resolution of the energy crisis and strong bipartisan leadership, a sustainable energy policy cannot emerge.

The national, and some cases international, associations of electricity, oil and gas, and coal firms are forums for addressing the big-issue policy questions faced by all energy industry participants working collectively and each industry independently. Associations and individual industries meet early each year to identify the more pressing issues they feel will have the greatest impact upon their operations. With little change seeming to result, those organizations and industries spend millions to ensure that legislation unfavorable to their interests does not get passed in Congress. Thus, the act of producing a comprehensive energy policy is exceedingly complex. Just a partial list of organizations with a stake in the nation's energy policy is displayed at the end of the book and reveals the extent of the fragmentation of the industry.

Structure of the Book

The book is organized into three parts with a preface, introduction, and a comprehensive bibliography. The first section includes six chapters that frame the energy policy problem by reviewing the history of energy policy in the United States, identifying the players in the policy-making drama, and bringing to light the costs and benefits and economic and political realities of the policy alternatives now competing for dominance. The second section includes five chapters that delve into some specific energy policy strategies and strategic factors that influence and shape energy policies. Four appendices are also included in the book. Appendix A provides a number of review and discussion questions for each chapter to facilitate the book's classroom use. Appendix B is a timeline of salient energy policy events that have occurred since the end of World War II. Appendix C is a list of energy policy related acronyms, while Appendix D is a brief glossary of important energy policy terms.

Part 1: The Challenges in Crafting U.S. Energy Policy

The six chapters in Part 1 are an introduction and overview of the economic and political realities that make up the “big picture” of the U.S. energy problem in the early years of the twenty-first century. By reviewing the many failures and few successes of a half-century of energy policy, the tremendous difficulties facing today's policy makers should come into clearer focus. In the process,

this will serve to frame the energy question within the scope of proposed solutions with which most everyone is familiar.

Chapter 1, “The Political Realities of Energy Policy,” explores the political and economic realities of establishing a comprehensive energy policy that will satisfy all groups with an interest in energy. One major roadblock in the establishment of a workable energy policy has been the lobbying efforts of powerful major energy pressure groups. A second problem has been the short memories of policy makers.

Chapter 2, “Energy Policy in Transition,” looks at the transition in efforts of American presidents, legislators, and public and private individuals and groups to forge a sustainable energy policy that balances the requirements to meet current energy needs at affordable prices, the environmental concerns and climate dangers, and investments in long-term, secure, renewable energy resources. These efforts include negotiating and compromising on many subpolicies required by a comprehensive plan for ensuring the availability of an affordable, reliable, nonpolluting energy supply. The competing players in this game include groups promoting greater conservation, higher energy efficiency, greater investment in research and development in such *nontraditional energy sources and hydrogen and nuclear fission*, and those who believe that we must do all we can to increase exploration and exploitation of existing domestic fossil fuels.

Chapter 3, “The Art and Science of Crafting Public Policy,” is a discussion of the processes by which the many stakeholders with an interest in energy policy attempt to influence those policies. The chapter begins with a brief overview of the structure of the energy industry; it then reviews the processes various stakeholders employ as they attempt to influence national energy policy.

Chapter 4, “The Long Search for a Sustainable Energy Policy,” is a discussion of some of the policies U.S. governments have implemented since 1945 to solve current problems such as spikes in consumer prices for energy resources, weaning the nation from its commitment to foreign energy supplies, making major changes to the culture of automobile ownership, and increasing the use and cost effectiveness of alternative fuels and energy conservation. The goal of all of these policies and programs has been to come up with a sustainable supply of clean, efficient energy for this and future generations.

Chapter 5, “Difficulties in Achieving a Balanced Energy Policy,” is a discussion on the on-again, off-again overriding goals that have driven energy policy since the 1970s: keeping energy affordable, protecting American producers, maintaining energy security, achieving energy independence, and others. The question is examined from four points of view: demand, supply, the environment, and national security.

Chapter 6, “What’s on the Current Energy Policy Agenda?” reviews some of the salient issues involved in competing to achieve or maintain a high position on the energy policy setting agenda. This jockeying for position is a natural result of the ever-changing nature of the energy concerns of the polity. When prices for fuels skyrocket during an energy “crisis,” for example, this results in a national commitment to conserve energy resources and penalize energy suppliers for high prices. Political leaders call for steps to eliminate our dependence upon foreign suppliers of fossil fuels by intensifying the application of scientific research for the development of alternative energy sources. When supply and demand again reaches equilibrium, energy concerns fade with a flooding of the market with an oversupply of fuels and steep drops in prices.

Conservation and efficiency are often promoted as the easiest and quickest ways to reduce dependence upon foreign energy sources. The chapter concludes with arguments supporting the policy position that conservation and efficiency, together or apart, should be the foundation of any final energy policy adopted.