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THE EVOLUTION OF THE REGULATORY STATE:

ENERGY POLICY AND REGULATORY REFORM IN CALIFORNIA

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

THE EVOLUTION OF THE REGULATORY STATE:

ENERGY POLICY AND REGULATORY REFORM IN CALIFORNIA

By Leslie Guliasi

This dissertation examines the evolution of energy policy and regulatory reform in California from an institutional perspective. The analysis centers on the ideological and interest group political dynamics responsible for the market and regulatory reform initiatives and the development of energy policy in California from the 1970s to the present. The regulatory and legislative arenas are chosen as the institutional location in which ideological and interest group politics converge to shape the origins, development, and implementation of public policy.

The study begins by describing the anatomy of the organizational structure of the bureaucratic institutions that play the major role in developing and implementing energy policy nationally and within California. It presents the theory of public utility regulation and examines the historical relationship between the modern state and private industry through the lens of the "regulatory compact." It traces the history of key legislative measures that mark the evolution of energy policy and regulatory reform and explains the role that crisis played in creating the social and political conditions that defined and, over time, redefined institutional relationships between the modern state and private industry. The analysis presented supports the claim that crisis in the energy sector led to regulatory and policy initiatives that disrupted long-

established institutional relationships between the state regulator and the regulated energy industry. Political conflict among interests embedded in the structure of the energy industry transformed the traditional role of the regulator from an impartial judge and arbiter of interest group conflict to an active interventionist in the creation and deployment of public policy. The study closes with some reflections on California's energy future, drawing lessons learned from California's experience in initiating market and regulatory reforms in the energy sector.

DEDICATION

To my family for their love, support, and encouragement

and

To W for his friendship and & W for his companionship

ACKNOWLEDGEMENTS

I am grateful for the help and encouragement I received from many friends and colleagues. My intellectual debts extend back to my undergraduate days at the University of California, Los Angeles, and especially to John Horton, a teacher and mentor. John created an intellectual milieu that attracted a talented group of students and student activists in the political heyday of the early 1970s that fed my intellectual curiosity. After receiving my bachelor's degree from UCLA, I entered the History of Consciousness Ph.D. program at the University of California, Santa Cruz, which led me inevitably to a home in the Sociology Department as a member of the first cohort of graduate students in the new Theoretical and Applied Sociology Ph.D. program. There, I found a supportive cast of faculty and fellow graduate students. One of them in particular, Colin Bell, has given me a great deal of encouragement in recent months as I pursued this work. He sent me references to books and articles and other useful leads, and engaged in conversations that caused me to rethink and refine my ideas. I also owe a special debt of gratitude to Bob Alford. Bob was the founder of the new Santa Cruz sociology graduate program. His intellectual influence is obvious, as I have relied on his theoretical approach to the study of public policy in my own work as evidenced here. During this period I was a member of the editorial board of the journal, *Working Papers on the Kapitalist State.* I was fortunate to learn from my fellow board members, in particular, Jim O'Connor, and especially Alan Wolfe,

whose friendship has endured over the years. Their work has had a profound effect on my own intellectual development.

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I owe special thanks to Paul Lubeck, Andy Szasz, and Bill Domhoff who agreed to form a committee to help me see this product through to the finish line. Bill was a member of my Ph.D. oral qualifying examination committee years ago. When I

asked for his support, Bill immediately agreed to help me gain readmission to the university and he championed my quest along the way. Bill read and commented on earlier drafts, which vastly improved the final product. One could not find a more helpful, supportive, and enthusiastic teacher and colleague. These three individuals, with their help and support, enabled me to realize a goal I set out for myself long ago.

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It took a long time for me to get to this point, but life has many twists and turns. I have few regrets regarding the decisions I have made and the paths I have chosen to pursue. I have had a rich and rewarding professional career and personal life. Completing this task represents but one point along my life's journey.

CHAPTER ONE

ENERGY POLICY AND THE POLITICS OF INSTITUTIONAL REFORM

Introduction

Global climate change poses the most serious existential threat to life on our planet. California has made a serious political commitment to address the threat of climate change through aggressive legislative and regulatory measures aimed at curbing harmful greenhouse gas emissions while fundamentally transforming and "greening" the state's economy.

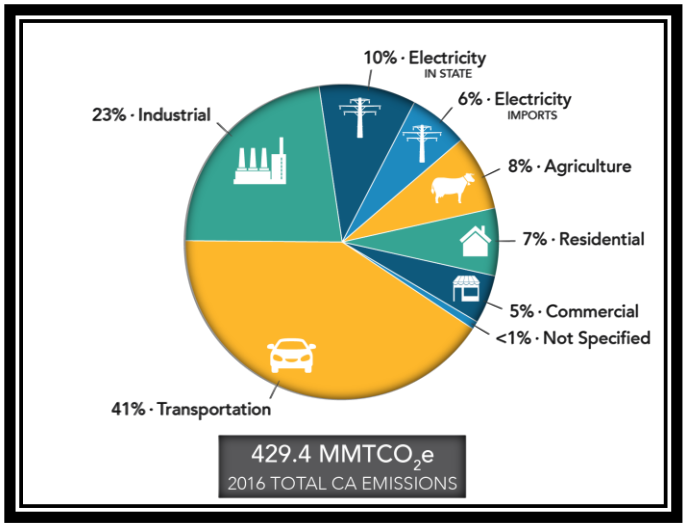
In 2006, the California legislature passed the *Global Solutions Warming Act*, which established a comprehensive, long-term approach to reduce greenhouse gas emissions. That legislation, and a subsequent executive order issued by then Governor Arnold Schwarzenegger, requires California to reduce its greenhouse gas emissions to 1990 levels by 2020, and eighty percent below 1990 emissions levels by 2050. This is an ambitious goal, and the state's political leaders have reaffirmed their commitment through further political and regulatory actions.

The legislature charged the state's Air Resource Board (CARB) with the responsibility for adopting programs to implement provisions of the *Global Solutions Warming Act*. Historically, CARB's main institutional focus has been on the transportation sector because vehicle tailpipe emissions and smokestack emissions from upstream oil refining account for the majority of greenhouse gas emissions in the state. Tailpipe emissions alone account for forty-one percent of California's

overall emissions. Adopting stringent industry regulations, such as imposing a miles-per-gallon fuel economy standard and a low-carbon fuel standard, or a softer market-based approach, such as California's cap and trade program, are some of the techniques designed to address the problem of air pollution. Providing economic incentives in the form of tax credits, notably the Production Tax Credit (PTC) for wind, and the Renewable Energy Investment Tax Credit (ITC) for solar, have been written into federal and state tax codes to encourage investment in alternative forms of energy as another means of addressing the problem of climate change. Regulatory standards and economic incentives are useful tools to induce advances in technology to help meet policy goals.

The energy sector in California, following transportation, is a major contributor of greenhouse gas emissions, as shown in the following illustration.

Figure 1: 2016 Total California GHG Emissions



Source: California Air Resources Board

Fossil-fired power plants are the main culprits. California's fleet of fossil-fueled power plants, however, is cleaner, comparatively speaking nationwide, largely because it relies principally on relatively clean burning natural gas and no in-state coal. In addition, California has been endowed with an abundance of clean hydro electric power thanks to annual snowfall in the Sierra Nevada mountain range. A vast network of dams and conveyance systems were built to support the Gold Rush in the mid-nineteenth century, which enabled the construction of the state's extensive hydroelectric system upon which we still rely today. California also boasts one of the world's largest geothermal resources from fields in both the northern and southern parts of the state. Since the late-1960s, nuclear power has contributed to California's energy supply, and until recently, was responsible for meeting as much as twenty percent of the state's electricity needs. While emitting no greenhouse gasses, nuclear power generation and spent fuel storage do, however, carry serious environmental and public safety risks. California is now on a path to wean itself off of nuclear power and replace it with renewable energy, advanced energy technologies, such as battery storage, and various forms of distributed energy resources.

California is known for its reputation as an environmentally conscious state. Endowed with Yosemite, Kings Canyon, Sequoia, and Redwood National Parks, the scenic beauty of California Highway 1 along the coast, the Mojave Desert, the Sierras, the Great Central Valley, home to the world's agriculture and food products, and an extensive state and regional parks system, California has been blessed with

magnificent natural wonders. Conservation and preservation have always been foremost on California's mind.

This is equally true about energy. California has been recognized for several decades for its pioneering energy conservation and energy efficiency programs. The state has fostered a vibrant renewable energy industry serving as a model around the world. It has supported manufacturing, promoted clean energy technologies, and enacted legislative and regulatory initiatives to encourage renewable energy generation and clean energy programs for consumers. The "million solar roofs" initiative, proclaimed by then-Governor Arnold Schwarzenegger, has more than symbolic meaning. California leads the nation in rooftop solar installations, and it has set aggressive statewide goals to advance renewable energy through a legislatively mandated renewable portfolio standard. More recently, California has redoubled its commitment to clean energy and a green economy. Governor Jerry Brown considers this to be a major part of his legacy. His administration has placed California in a leadership role on climate matters, and California's progressive policies, recognized worldwide, have set the standard for the rest of the nation to follow. Recent pronouncements commit California, the world's fifth largest economy, to one hundred percent use of zero-carbon electricity by 2045. California's well-practiced legislative and regulatory actions have positioned California to lead the nation in clean energy deployment. Regardless of the federal government's intentions, California has vowed to remain an active participant and to play a

leadership role in the United Nations cooperative agreement to address global climate change.

The Modern Environmental and Energy Movements

The fight for clean air and clean energy share a common purpose and common origins in the environmental movement. As Mike Peevey and Diane Wittenberg (2017: xvi) rightly point out in their timely monograph, *California Goes Green*, the origins of the contemporary environmental movement in California can be traced to the concern over clean air. Due to rapid economic expansion and exploding population growth in Southern California after World War II, smog in the Los Angeles Basin was choking the region. The demand for clean air ultimately led to regional and state-wide air quality regulations. In 1946, the California Legislature enacted the first air pollution control law authorizing the formation of county air pollution control districts. Los Angeles County opened the first air pollution control office in early 1947 and Santa Clara County followed soon after. The Bay Area Air Quality Management District was formed in 1955; the California Air Resources Board was created in 1967; and the South Coast Air Quality Management District in 1976. [1] In the years between the enactment of air quality legislation and the creation of the first air quality regulatory agencies in California, beginning in the late 1940s, the federal government, during the Nixon administration, in 1970, passed the Clean Air Act and the National Environmental Policy Act, which established the U. S.

[1] Source: Bay Area Air Quality Management District Website, which contain a very useful and informative history of air quality regulation.

Environmental Protection Agency (EPA) to lead the nation, following in California's footsteps.

In a similar vein, widespread public awareness about energy also grew out of crisis: the national energy crisis resulting from the Arab Oil Embargo in 1973. Long lines and mandated alternate fill-up days at the gas pumps heighted public concern over future energy supply and consumer prices. President Carter, summoning the nation, called the energy crisis the "moral equivalent of war." The Three Mile Island Nuclear Power Plant accident, in 1979, brought greater public awareness to the problem of the nation's energy future. At the dawn of this century, in 2000-2001, California, too, experienced an energy crisis, following an ill conceived reform effort to restructure the electricity market, a program widely supported by government and industry. The modern environmental and clean energy movements have evolved along similar paths in the ensuing decades. The regulatory regimes responsible for environmental and energy policy, though intertwined, have evolved along slightly different bureaucratic paths.

The Role of Crisis and Institutional Dynamics

Crisis in the energy sector created the social and political conditions that defined and, over time, redefined the institutional relationship between government and private industry. The first such crisis point, in the early part twentieth century, led to New Deal legislation -- the Federal Power Act and the Public Utility Holding Company Act -- which created new federal agencies dedicated to regulating the

energy industry. An outgrowth of this first crisis period was a grand political bargain between government and industry, known as the "*regulatory compact*." This *quid pro quo* institutional arrangement was instrumental in promoting a relatively stable environment for both industry and consumers that lasted for several decades between the end of the Great Depression and the prosperous post-World War II period.

The decades immediately following the Second World War marked a period of economic growth and prosperity. According to data compiled by the Department of Commerce Bureau of Economic Analysis, and illustrated in the following graph, U.S. gross domestic product nearly doubled between 1945 and 1980.

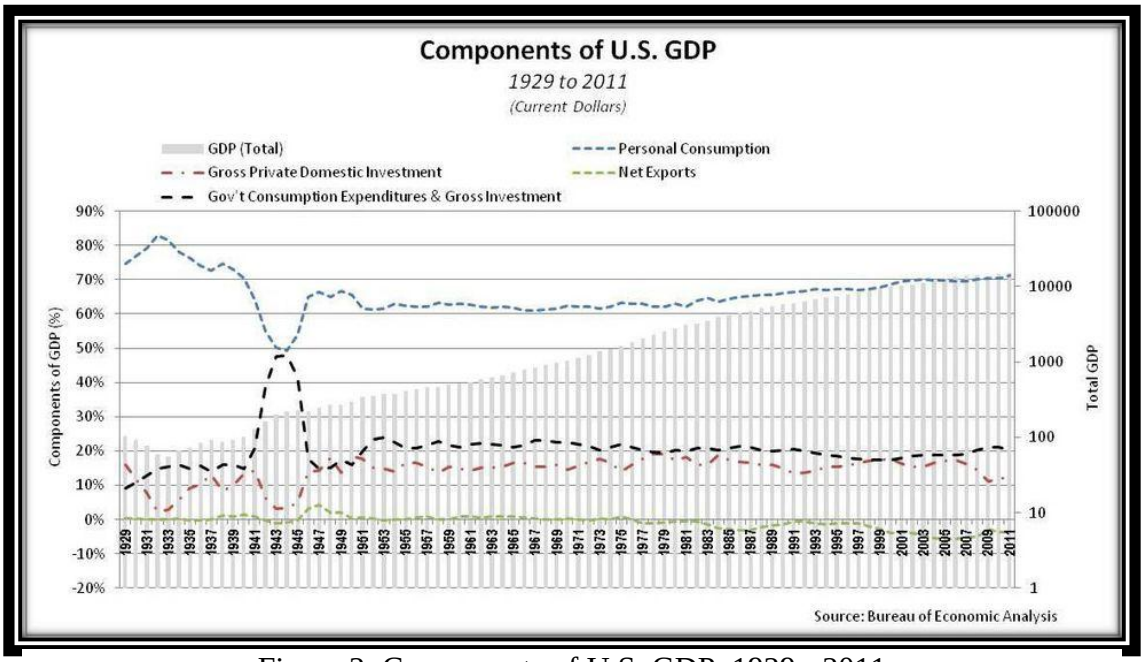


Figure 2: Components of U.S. GDP, 1929 - 2011

Similarly, the growth rate of per capita output "slowed a bit between 1930 and 1950 to just over 1.5 percent, then increased again to just over 2 percent between

1950 and 1970" (Picketty, 2014:97). Economic historian Robert J. Gordon observed that "between 1940 and 1970, output per person and output per hour continued to increase rapidly" (Gordon, 2016:319). In his sweeping history of the rise and fall of American economic growth since the Civil War, Gordon documents the fantastic progress in the standard of living experienced by the average American in virtually every aspect of ordinary life, covering every human want and need: "food, clothing, housing, transportation, entertainment, communications, information, health, medicine, and working conditions" (Gordon, 2016:320). The fruits of economic growth, however, were not spread equally across the land; rural America, and particularly the rural South, were less fortunate than the urban North and the West. Nevertheless, in gross terms and taking the long view, "the standard of living tripled over these seventy years [1870-1940]" (Gordon, 2016:321). From a regulatory perspective, if the post-World War II period was relatively calm and stable, things were about to change as geopolitical events caused major disruption. So, too, for the relationship between the regulator and private industry and for the *regulatory compact*.

A second crisis point, the nation's energy crisis precipitated by the Arab Oil Embargo in the 1970s, disrupted long-established institutional arrangements and set in motion a course of events which began to undermine the regulatory compact. Market forces and the consumer movement desirous of "choice" led to legislation in the form of the Public Utility Regulatory Policies Act in 1978, followed by the

Energy Policy Acts of 1992 and 2005, and to concomitant state-level policy initiatives which introduced *competition* in the marketplace.

This period also marked the beginning of a trend that transformed the relationship between government regulation and private industry in the utility sector, and instigated the unraveling of the regulatory compact. In a study of regulatory intervention in the utility industry, Barbara Barkovich shows convincingly how, beginning in the 1970s, the demeanor of the regulator changed from a "traditional, unobtrusive approach to an interventionist one" (Barkovich, 1989:1). Barkovich's thesis draws mainly from a case study of the California Public Utilities Commission's treatment of energy conservation programs, but her analysis foretells a broader trend that ushered in a new set of regulatory controls over the monopoly utility.

During the good times of steady economic growth after World War II, the regulatory regime was unobtrusive. The California commission imposed little oversight of utility operations and spending. The utilities were given a fair degree of freedom, with minimal review, to invest in plant and equipment to keep pace with economic expansion and population growth to meet consumer demand. Rate increases were modest and consumers had little cause to protest. Forecasting load growth and rate increases was a simple matter of plotting a straight line with a ruler and pencil on piece of graph paper. Suddenly, all of that changed with the nation's energy crisis.

As a result of the OPEC oil embargo, fuel prices rose sharply; so did consumer costs in the form of rate increases, as utility costs were routinely passed through to ratepayers. The California commission acted in response by instituting new regulatory controls and began to carefully scrutinizes utility management and decision making. Sophisticated econometric modeling, end-use forecasting, and multivariate quantitative analytic and planning tools took the place of the pencil and paper approach. The commission introduced a host of new accounting mechanism, with catchy acronyms like ECAC and ERAM, to oversee utility spending and ratemaking. Up-front and after-the-fact regulatory mechanisms were installed to approve and certify new projects, to review utility spending, and to justify cost recovery. The utility was now required to provide detailed program budgets, and the commission reviewed utility costs and expenditures in periodic rate cases, which suddenly commanded a disproportionate amount of time and expense on behalf of utility management and commission staff, as well as third-party intervenors in the regulatory process. In short, the regulator now "assumed responsibility for decision making regarding utility operations and planning which had previously been left to management" (Barkovich, 1989:19).

Thus, the two decades beginning in the 1970s, sparked by geopolitical events and the Arab Oil Embargo, the introduction of the Public Utility Holding Company Act, and state-level policy reform initiatives, was a period characterized by strong regulatory control and active intervention on the part of the regulators. While regulatory interventionism became the dominant mode beginning in the decade of the

1980s and into the 1990s, things were about to change again. The policy initiatives that introduced competition at the wholesale level in the generation sector, followed by retail competition and customer choice at the retail level, caused regulators and the industry as a whole to question whether the interventionist, command-and-control style of regulation was best suited to the dynamic and increasingly competitive electricity industry. As will be examined in detail in Chapter Four, this period also witnessed hotly contested debates and experiments with various bureaucratic and market-based strategies to reform the regulatory regime.

The political struggles that played out in the regulatory arena during this time resulted in a redesign of California's energy market structure and the introduction of new institutional arrangements. California's foray into electricity deregulation ended poorly, resulting in the infamous California Energy Crisis, the *third crisis point* in this historical account, which occurred at the dawn of the twenty-first century. This period also witnessed further erosion of the main tenets of the regulatory compact. The regulatory policy initiatives supported by progressive energy and environmental legislation in California not only disrupted prevailing institutional relationships between the state regulator and the regulated electricity industry, but such measures further emboldened government regulators. The California crisis created political conditions that enabled the regulators to seize a unique opportunity to use their institutional position of power to define the public policy agenda and to control policy implementation through the instrument of the regulated industry. Among other things, this study examines the role that crisis played in the formation of energy

policy during each of these periods, and demonstrates how political conflict among structural interests transformed the traditional role of the regulator from an impartial judge and arbiter of interest group conflict to an active interventionist in the creation and deployment of public policy.

The Regulation of Industry by Agencies & Commissions

The notion of government intervention in the affairs of private industry is not novel. The regulation of industry by independent regulatory commissions can be traced to the post-Civil War period with the passage of the Interstate Commerce Act, in 1887, and the establishment of the Interstate Commerce Commission (ICC). The ICC was created to regulate railroads to curb price discrimination by promoting fair trade. The Interstate Commerce Act was carefully constructed so as not to violate the principles of laissez faire which, at that time, was the dominant social ideology as it pertained to business and economic affairs. It "was hailed by agrarian and middle-class groups as the protector of individual private enterprise" (Bernstein, 1955:21). The popular notion of a laissez-faire economy, nevertheless, stood in direct opposition to the political argument in favor of the need for government to exercise its powers to curb market abuse and to protect the public from monopoly control. Government intervention, as Gabriel Kolko points out in his study of American capitalism and the Progressive Era, "was never a question of regulation or no regulation, of state control or laissez-faire." It was a question of "what kind of regulation and by whom" (Kolko, 1963:4).

The history and logic of regulating business by independent commissions was best explicated in a widely recognized authoritative classic monograph by Marver H. Bernstein, the first dean of Princeton University's Woodrow Wilson School of Public and International Affairs, and the fourth president of Brandeis University. Bernstein's study traces the intellectual origins and historical development of the regulatory movement in the United States, and delineates the ideal characteristics of modern regulatory agencies.

First and foremost, according to Bernstein, regulatory agencies, to be successful, must be *independent*. They must be free from the control of corporations, political parties, branches of government, and politicians. Obviously, absolute independence is more of an ideal state rather than a practical reality. Regulatory commissioners are appointed by the executive branch, often with the advice and consent of the legislative branch, and they are expected to carry out the policies and vision of their sponsors. Yet, commissioners are also expected to be "masters of their own souls," as Bernstein (1955:138) eloquently stated. Regulatory commissions must execute their duties within the parameters set by the relevant controlling statues and obey the rule of law. Moreover, they must not surrender or delegate their public duties to private associations, as Grant McConnell (1966:146-147) cautioned in his study of *Private Power and American Democracy*.[2]

[2] McConnell points to the merger between the "public" and the "private" and provides examples of state sanctioned delegation of power to private entities, e.g. labor unions or professional and trade associations, such as the American Farm

Ideally, regulatory commissions must also be free from the control of the industries they regulate. There is a rather extensive literature on "regulatory capture," and numerous case studies may be found in the academic literature and in journalistic accounts concerning regulatory capture in virtually every regulated industry (See Novak, 2013). Weinstein (1968) and Kolko (1963, 1965) have shown how corporate interests were not only instrumental in the creation of government regulation, but how forward-thinking corporate leaders understood the economic benefits that would follow from stability and rational order in economic affairs. Studies of regulatory capture, nevertheless, have attempted to demonstrate where government has failed and a regulatory agency, created to act in the public interest, instead advances the commercial or political interests of special interest groups that dominate the industry it is charged with regulating.

In their study of the theory of regulatory capture, Daniel Carpenter and David E. Moss (2014) explain that

> "Regulatory capture is the result or process by which regulation, in law or application, is consistently or repeatedly directed away from the public interest and toward the interests of the regulated industry, by the intent and action of the industry itself" (2014: 13).

Their theory emphasizes the role of *intent*, and draws a distinction between "strong capture" and "weak capture," or the degree to which self-serving interests are advanced at the expense of the public interest. The ultimate goal of strong capture is

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Bureau Federation and the U.S. Chamber of Commerce. He does not explicitly discuss the relationship between the "public" and private corporations, but the same principles apply.

the abolition of regulation, but falling short, the aim of strong capture is to dismantle regulation or the agency responsible for policy. Weak capture, by contrast, is a condition in which regulatory controls exist but compromise the effectiveness of regulation to enhance the public interest (Carpenter and Moss, 2014:11-12). In practical terms, independence is an ideal state, a relative, not an absolute condition of a regulatory agency's existence.

Regulatory commissions must also be *impartial*. One such means of achieving the goal of impartiality is to make regulatory commissions *accountable* to a higher authority. However, in modern times, regulatory commissions are usually accountable to the executive branch of government, which has the power to appoint. As a check and balance against excessive executive control, regulatory commissions usually operate under the oversight of the legislative branch of government. Max Weber, for example, was quite aware of the need for bureaucracies to be held accountable and cautioned against the tendency for bureaucratic rule to undermine democratic values. He writes,

> "The power position of a fully developed bureaucracy is always great, under normal conditions over towering. The political 'master' always finds himself, vis-à-vis the trained official, in the position of a dilettante facing the expert. This holds whether the 'master,' whom the bureaucracy serves, is the 'people' equipped with the weapons of legislative initiative, referendum, and the right to remove officials; or a parliament elected on a more aristocratic or more democratic basis and equipped with the right or the *de facto* power to vote a lack of confidence; or an aristocratic collegial body, legally or actually based on self-recruitment; or a popularly elected president or an 'absolute' or 'constitutional' hereditary monarch" (Weber, 1968:991-992).

Relevant to this study, for example, California public utility and energy commissioners are appointed by the governor, confirmed by the state senate, and operate under the supervision of standing committees of both houses of the state legislature. Yet, appointed commissioners also operate independent of the *direct* influence of the governor, the legislature, and other higher government officials, and appointed commissioners are expected uphold the integrity of the office.

Impartiality also rests, in part, on a set of professional standards and codes of conduct to shield agencies from *bias* and *favoritism*. To demonstrate their impartiality and to protect themselves from the imputation of bias or favoritism, regulatory agencies are expected to follow a set of codified rules, practices, and administrative procedures. They rely on a staff of professional experts to carry out policy directives by applying the strictures of administrative rule, and staff members are expected to act in their professional capacities free from personal bias or political ideology. Chapter 4 will explain how, in the context of California energy policy, the ideology of "professionalism," bureaucratic position, and technical expertise frustrated reform efforts as entrenched interests, especially among agency personnel, stood in the way of change by clinging to familiar administrative practices, which reinforced the status quo. Weber, too, noted how bureaucratic position and knowledge can be used to evade accountability to a higher authority. Bendix and Roth, citing Weber's treatise, *Economy and Society* (1968) write,

> "In his discussion of bureaucracy Max Weber noted one major obstacle standing in the way of accountability: the tendency of officials to increase

> their intrinsic superiority as experts by keeping their knowledge and intentions secret" (1971:147).

In contested matters, the judicial model is often used, in which rules of evidence and due process are applied as a means of ensuring impartiality and accountability. Adherence to administrative procedures is also a defensive measure used by agencies to shield the decisions they render from accusations of favoritism or bias leveled by an aggrieved party. To restrain regulatory agencies from overreaching their statutory authority, aggrieved parties are given the right of appeal, sometimes to the agency itself, but usually to a court of law, which has the power to evaluate a contested matter and either uphold the agency's decision, remand it for further adjudication, or overturn its ruling.

Fairness and consistency are hallmarks of an agency's independence and impartiality. Regulatory commissioners, while appointed by the executives they serve, are duty bound to act in the public interest. Hence, one method of protecting appointed commissioners from undue influence by the executive and to give them an air of impartiality is to guarantee commissioners a term of office, not defined by service "at the pleasure" of the appointing office holder. All said, a prima fascia case can be made that impartiality is another ideal rarely achieved in the real world of politics. A common criticism leveled against regulatory commissions is that "they develop an orientation toward the views and interests of their clientele and become ripe for capture" (Novak, 2013:6).

Impartiality and bias-free actions are essential characteristics to shield regulators from the accusation of industry capture. However, the notion of the *revolving door* is often used as an indicator to prove regulatory capture (Dal Bo, 2006).[3] California commissioners, like most regulators, are appointed for a specific term and, therefore, have a finite shelf life. Opportunities for future employment may lie outside of government in the private sector, often in the very industries that were the subject of the regulator's expertise. Therefore, regulators must resist the temptation for their actions and decisions to appear to be lenient as a *quid pro quo* for future employment in industry.

In the American system of government regulation of industry is intended to serve the public by protecting it from unfair or harmful business practices. Yet regulation is inherently political. The job of the regulator is to ensure that all sides are given a fair hearing. California's energy policies have evolved though a dynamic political process and the clash of structural interests, each with a stake in the outcome of conflict, played out in the regulatory arena. Regulators are by no means removed from the political fray, somehow perched above, passively observing the actors as they engage in struggles to work out their differences while attempting to advance their own special interests. Nor are the regulators immune from the persuasion of special interests. Indeed, regulators have their own motives, ideological proclivities,

[3] Dal Bo's review essay, while theoretical, relying on econometric models to explain empirical phenomena, is chosen because it emphasizes utility regulation.

and bureaucratic positions and powers to protect, and these factors may influence their actions.

The Theory of Structural Interests

Central to this study is an analysis of the origins, implementation, and evolution of California's energy policies, through a focus mainly on the electricity sector. The theoretical framework adopted for this work is based on the institutional analysis developed in Robert Alford's (1975) study of the politics of health care reform. Alford's theory of institutional political dynamics, applied here to the reform initiatives instituted in the energy sector in California, reveals how interest-group conflict and change evolve in modern social institutions.

In his study of health care politics, Alford noted that two general ideological perspectives dominated the debate over health care reform: "market reform" and "bureaucratic reform." The reform efforts that dominated the debate within California about the future of the energy industry followed the same logic. Advocates for market reform called for changes to the energy delivery system by introducing or increasing market forces through competition. They argued that competition is the most rational and efficient means to deliver energy services at the lowest possible cost to consumers. As the market for energy delivery evolved over the course of the twentieth century, reform-minded advocates argued for changes to the regulatory system to keep pace with the evolution of competition in the marketplace. However, government regulation of the energy sector is generally understood to be necessary to

protect the public from market abuse. Since the collapse of the holding company structure in the 1930s, as shall be explained in Chapter 3, government regulation has dominated the energy services industry. Advocates for bureaucratic reform called for changes to the government-controlled administration of the regulatory system to make it more efficient and to conform it to the modern era.

Both the bureaucratic and market reform perspectives carry their own ideological assumptions about the functioning of the energy delivery system, and each has some degree of validity. Both perspectives recognize forces in the environment and changing market dynamics, but they differ in their approach toward reform. The various proposals to reform California's electricity industry that were put forward, beginning in the early 1990s, bear some resemblance to each point of view. Alford's "structural interest perspective" is used to help understand how political dynamics caused fundamental changes in the organizational structure and regulation of the energy delivery system. Neither the market reform nor the bureaucratic reform ideologies offers a complete account. Alford's theory is used to explain how powerful interests used their institutional or bureaucratic positions of power to advance or block reform.

To repeat, the reform perspectives Alford identified in his analysis of the health care industry are not unique to health care policy. They may be applied to any public policy subject matter and are certainly applicable to energy policy. This study, following Alford's theory of structural interests, analyzes the ideological and interest

group political dynamics responsible for the evolution of market and regulatory reform initiatives and the development of energy policy in the state of California from the decade of the 1970s to the present.

The Methodology of Institutional Analysis and Applied Sociological Research

Emile Durkheim (1982) defined sociology as the "science of institutions." Steven Lukes in his *Preface* to Durkheim's, *The Rules of Sociological Method*, explains that the concept of "institution," as defined by Durkheim, is

> "...all the beliefs and modes of behavior instituted by the collectivity; sociology can then be defined as the science of institutions, their genesis and their functioning" (Durkheim, 1982:45).

Herbert Spencer, however, is credited with being the first sociologist to use the term "institution."

> "[Spencer] described society as an organism. Accordingly, for him institutions were society's 'organs.' He distinguished six different types of social institutions: those related to the family, politics, religion, the economy, ceremonies, and professions (Christopher Henning in Ritzer, 2007:2344).

Contemporary social scientists use the term institution more expansively, and often apply the terms "institution" and "organization" interchangeably. In an effort to clarify and distinguish these two terms, Bouma (1998) writes,

> "Institutions are sets of norms which apply across a variety of specific organisations. Organisations are structures of social relationship, social actors arranged in positions and roles; usually, but not always, deliberately arranged and designed to achieve some end. Institutions provide normative environments shaping the activities of organisations. Distinguishing institutions and organisations facilitates discussion of the relationship between them..." (Bouma, 1998:232).

Another way of thinking about the distinction between the two is to consider an institution to be a higher level of abstraction. The focus of this study, at an institutional level, is the political realm, specifically the "state," or, in conventional parlance, government. In broad terms, this study is an exploration of institutional dynamics and the relationship between the polity and economy, or between government and private industry. Social relationships, which coalesce around common interests, express themselves in formal organizations, bureaucracies as defined Max Weber (Gerth and Mills 1948). The structural interests, which manifest themselves in organizational form and that appear in this study -- government agencies, corporations, trade associations, unions, nongovernmental organizations, and the like -- pursue their political or economic goals in a particular institutional setting: the regulatory and legislative arenas. These are the key institutional structures in which organized interest groups converge politically to shape the origins, development, and implementation of energy policy.

As a product of Applied Sociology, this dissertation follows a tradition of qualitative social science research and integrates a variety of conventional research methods. It does not follow the dictates of any one particular research paradigm. Rather, it draws from a variety of well established qualitative techniques -- *documentary archival research, narrative inquiry, content analysis, and participant observation* -- to support the narrative presentation. The analysis is supported by information and data obtained through formal and informal interviews with key informants, experts in the energy field, most of whom participated personally in the

regulatory and legislative events described in the narrative, or who studied and wrote about key events. In no small way, the presentation and analysis also benefitted from my personal involvement as a "participant observer" in most of the major policy debates that are central to this study.

Documentary archival research was the principal method used to support the narrative analysis for this work. I relied extensively on authoritative sources such as enacted legislation, regulatory commission decisions and reports, information gleaned from public agency websites, and other publicly accessible documents. My research was facilitated by reliance on the internet to guide me to original source documents in the public domain. I also relied upon secondary source materials from the academic social science literature. The footnotes and bibliography contain a record of the authors, books, journal articles, and other sources I used to help me construct the narrative and to support my arguments.

I use facts and figures where appropriate to support a specific point, but I have not followed the formal conventions of survey research, systematic data collection, quantitative analysis, or typological categorization. I chose to use the word "evolution" in the title of this work to convey the notion that the policies I discuss and analyze have a time dimension and unfold through time. They follow an organic path, meaning that today's ideas stand on the ideas of the past and that today's ideas owe a debt to previous generations of thought and action. This is not to suggest that the path is always linear or that policies develop by following a straight-line trajectory through time. History itself is fraught with twists and turns. In the real world, policy

is socially constructed. It is the product of real-world political confrontation and collective action. Nor are actors on the political stage equally endowed. Power and position often determine the winners and losers. The narrative presentation herein identifies both.

Narrative inquiry may also be an appropriate label to describe the approach I followed. By narrative I simply mean "a story," "an account," or, perhaps more aptly, "an interpretation" of events. This work has benefitted from the "narrative research" tradition in the social science literature (Berger and Quinney 2005:9). One form of narrative inquiry is the "storied" approach, in which people tell their own stories as a means of "self understanding," to form personal or social "identity," or to reveal "truth" using written or spoken words. Storytelling, in this sense, is usually of a personal nature. As a research method, the storied approach typically involves a personal account of events or documentation of the personal involvement of the researcher in the research subject. "Biographical life history" is one example of the storied approach. Storytelling may also be used as a technique to collect information through survey research, either in the form of structured or open-ended questionnaires. Another form of narrative inquiry is the "analytical" approach. In this method, the researcher maintains a neutral stance and uses the powers of interpretation to observe patterns, draw inferences, or theorize about real world problems or events. This study falls into this latter category (See Ritzer, 2007:3141-3142).

I employ the term "narrative" somewhat liberally throughout this work. I explain the development of energy policy in narrative form, by which I mean that I describe events as they unfolded or evolved over time, typically through a formal process, in particular institutional settings -- the regulatory and legislative arenas. My use of the term narrative is not meant to suggest that the issues I discuss are merely described, devoid of analysis or interpretation. I do, however, go to some length to *describe* events, the content of a piece of legislation, a report, or a major policy decision. Without describing such content, any interpretation and analysis would be devoid of meaning and be of little intellectual value. My purpose is to shed light on energy policy as it affects society and ordinary people in the real world of their everyday lives.

Content analysis is another research method used by sociologists, anthropologists, and psychologists to analyze and interpret meaning as it is constructed in a social context. Content analysis, for example, has been used to interpret verbal and nonverbal interpersonal communications and to analyze the content found in the mass media. "Symbolic interactionism" and "ethnomethodology" are two subfields of sociology that use the techniques of content analysis to study and understand social behavior. These modern schools of sociological thought trace their theoretical origins to Max Weber (Gerth and Mills 1946; Weber 1962 and 1968) and in American sociology to George Herbert Mead and Charles Horton Cooley (Ritzer 2007:4917-4922). Symbolic interactionism is concerned with explaining social behavior in terms of how people interact with one another via symbols, and how social structure is best

understood in terms of social interaction. Similarly, ethnomethodologists are concerned with the methods people use to make sense of their everyday world through practical experience and "common sense" rather than formal logic and theory. Harold Garfinkel (1967), the founder of ethnomethodology, and his followers devised clever techniques by disrupting the "normative social order" to reveal how people take for granted aspects of the everyday social world. In this study, I do not use standard ethnomethodological or ethnographic techniques, nor do I follow the conventions of systematically counting and coding used in formal content analysis. My goal is to provide insight by analyzing and interpreting sourced materials, and to explain the origins and development of policy as a product of the clash among interests in an institutional setting, the policy arena.

My interest in public policy and in the subject of regulation and, more specifically, energy policy and regulation, stem from of my career in the energy industry. This study may also be understood as a product of *"participant observation."* There is a well-established tradition of participant observation in the social sciences. In its standard form, the researcher plays a dual role: as a subject of the research and simultaneously as an observer of events. In genuine participant observation, the researcher, as participant, approaches the research subject dispassionately and maintains "distance" between one's self and the object of the research. This is not always an easy role to maintain. Distancing may be either physical or intellectual. Each particular situation determines what kind of distance is possible. Participant observation also mandates that the researcher maintain some degree of "objectivity."

In my case, distancing did not pose an intellectual or ethical problem and did not compromise my "objectivity" as an analyst. Analysis and interpretation of written documents naturally provides a measure of distance. Social scientists have long debated whether pure objectivity and "value-free" analysis is even possible. Max Weber held that the social sciences are necessarily value laden, and it is illusory to believe that pure objectivity, "free from presuppositions," (Gerth and Mills 1946:147) is possible in the study and interpretation human affairs. Nevertheless, the burden lies with the researcher to leave his or her personal views behind if the goal is to achieve some degree of objectivity in the pursuit of knowledge and meaning.

Finally, the material and analysis that form the basis of this study are supported by information I obtained from formal interviews and conversations I had with analysts and experts in the energy policy field and with other witnesses and participants in the policy debates that I discuss. These "key informants" helped me to sort the wheat from the chaff, to point me in the right direction, and to help me focus on what was important and significant. They were also helpful in reminding me of key events, triggering my memory about important facts and details, and, most importantly, correcting me when I was wrong, misguided, or off on an irrelevant tangent.

In sum, the research methods employed in this study may best be characterized as a synthetic, hybrid approach. I borrowed techniques from several different schools of qualitative research methods used in the social sciences, while not strictly adhering to the guidelines prescribed by any particular one. This eclectic approach freed me to

present my material as a narrative account. It also gave me the freedom to interpret and analyze events and to reveal the meaning of policies as a product of a dynamic political process. The paradigm I used, borrowed from Alford's institutional perspective, gave me an analytical frame of reference and a vocabulary, which helped me to overlay a theoretical perspective on my subject matter. As I noted earlier, my purpose was to understand and shed light on energy policy as it unfolded and as it affects the lives of ordinary people in the real world. My hope is that this work has succeeded in living up to the ideal of what C. Wright Mills meant by the "sociological imagination" (Mills 1959) where history and biography intersect in relation to the broader society. I hope I have succeeded in this endeavor, even if to a small extent.

Organization of the Text

CHAPTER TWO - THE ANATOMY OF ENERGY DELIVERY AND REGULATION provides an overview of the institutional structure of energy regulation in the United States. The chapter describes the anatomy of the country's energy delivery system, a patchwork of local, regional, state, and federal-level organizations that reflect the country's republican character. The chapter also presents the paradigm of public utility regulation. Finally, the chapter presents the organizational framework -- the key federal and state regulatory agencies -- responsible for developing and implementing energy policy, focusing particularly on the Federal Energy Regulatory Commission (FERC) and California's two principal

energy regulatory agencies, the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC).

CHAPTER THREE - LANDMARKS OF LEGISLATION traces the legislative history of the key measures that form the institutional framework of the nation's energy policies. The survey begins with the New Deal Federal Power Act and the Public Utility Holding Company Act, and follows the development of energy policy though an inventory of relevant federal legislative measures. Furthermore, this chapter provides a history of the major legislative and administrative initiatives that would later shape California's environmental and energy agenda, and provides the institutional framework, marking the location of interest group conflict and change in the energy policy arena. The focus here is at the national level and focuses attention on the *outcomes* of reform efforts embodied in the form of federal legislation. Subsequent chapters examine the political *processes* that led to the development of key legislative measures and regulatory initiatives that shaped energy policy in California.

CHAPTER FOUR - RESTRUCTURING CALIFORNIA'S ELECTRICITY INDUSTRY: IDEOLOGICAL AND INTEREST GROUP POLITICS investigates the political process that led to fundamental reform in the energy sector in California and explains how structural interests competed to advance their own concerns in the name of "good public policy." The focus here is on the regulatory arena, the setting where interests groups converge, because it offers a rich contextual environment to illustrate

how interest group conflict occurs and how structural interests compete to pursue, protect, or advance their own particular economic, political, or ideological interests, while attempting to frustrate or impede the interests of others. The chapter analyzes the market and regulatory reform initiatives introduced in California as inputs and outcomes of the ideological and interest group political struggles pursued through the regulatory process.

CHAPTER FIVE - MARKET AND REGULATORY REFORM: DESIGN, IMPLEMENTATION, COLLAPSE shifts the main focus of attention to the legislative arena, and back again to the regulatory arena, where competing structural interests continued their efforts to shape the new market structure, to advance their own particular economic interests, and to conform the market to fit to their respective ideological perspectives. The chapter briefly chronicles California's experiment with electricity industry restructuring and its resulting market failure. The chapter then looks past the California Energy Crisis and presents the regulatory reform initiatives undertaken in the aftermath of the crisis that set the future course for "greening" California's economy.

CHAPTER SIX - CHARTING A PATH FORWARD: THE ENERGY ACTION PLAN AND COMBATING GLOBAL CLIMATE CHANGE continues the narrative and points toward the future. The chapter introduces the state's Energy Action Plan, a blueprint created to guide future policy development, and examines two specific policy initiatives -- promoting energy efficiency and advancing renewable energy

development. Market failure and the California Energy Crisis made plain the need for the institutions of government to restore order in the marketplace and to guide future energy policy. The political vacuum created by the energy crisis provided a unique opportunity for the state's regulators to intervene in the political and regulatory process to use their institutional position of power to drive the policy agenda. Seizing the opportunity to restore order and to stabilize the market in the aftermath of the energy crisis, California's regulators used their institutional position of power to set the policy agenda, largely on their own terms, to serve the public interest while also preserving their own bureaucratic position of power. The Energy Action Plan marked a watershed moment in the evolution of California's energy policy and represented a radical shift in the manner in which public policy in the energy sector would now be deployed.

POSTCRIPT - AN INSURGENT MOVEMENT: FREEDOM AND REGULATORY CONSTRAINT. This study concludes with a postscript, which offers some reflections on the future of California's evolving energy policies, by drawing lessons learned from California's experience in initiating market and regulatory reforms in the energy sector from the 1970s to the present.

CHAPTER TWO

THE ANATOMY OF ENERGY DELIVERY AND REGULATION IN THE UNITED STATES

This chapter provides an overview of the institutional structure of energy delivery and regulation in the United States. It describes the anatomy of the U. S. energy delivery system, a patchwork of local, regional, state, and federal-level organizations that reflect the country's republican character. The chapter also presents the paradigm of public utility regulation and the notion of the *"regulatory compact,"* which appears prominently in the analysis of regulatory reform. Finally, the chapter presents the organizational framework -- the key federal and state regulatory agencies -- responsible for developing and implementing energy policy, focusing particularly on the Federal Energy Regulatory Commission (FERC) and California's two principal energy regulatory agencies, the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC).

Republicanism and the Foundation of Regulation

In the *Federalist Papers, No. 39, The Conformity of the Plan to Republican Principles,* James Madison set out to describe the character of the young nation's republican system of government. He explained that the United States is both a *national system,* meaning a consolidation of sovereign states, and a *federal system,* meaning a government over the sovereign states. He writes,

> "If we resort for a criterion to the different principles on which different forms of government are established, we may define a republic to be, or at least may

> bestow that name on, a government which derives all its powers directly or indirectly from the great body of the people, and is administered by persons holding their offices during pleasure, for a limited period, or during good behavior" (Kramnick, 1987: 255).

Madison concludes *Federalist No. 39* with the following:

> "The proposed Constitution, therefore, ... is, in strictness, neither a national nor a federal Constitution, but a composition of both. In its foundation it is federal, not national; in the sources from which the ordinary powers of the government are drawn, it is partly federal and partly national; in the operation of these powers, it is national, not federal; in the extent of them, again, it is federal, not national; and, finally, in the authoritative mode of introducing amendments, it is neither wholly federal nor wholly national" (Kramnick, 1987: 259).

Madison's logic and eighteenth century language may be hard to grasp for the modern reader outside of a civics class. It is no wonder that the American system of government is difficult to understand by the ordinary citizen removed from the everyday practice of civic engagement. Nevertheless, the republican system of government is the underlying foundation of the nation's system of energy delivery and industry regulation.

The argument between republicanism and federalism was settled with the ratification of the Constitution, in 1789, and the inclusion of the Commerce Clause, which gives government broad powers to regulate industry. [4] In the *Federalist*

[4] U. S. Constitution, Article I, Section 8, Clause 3. The 10th Amendment states that the federal government possesses only those powers delegated to it by the United States Constitution. All remaining powers are reserved for the states or the people: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people."

Papers, No. 11,[5] Alexander Hamilton argued for the right and necessity of a unified government to regulate trade and commerce (Kramnick, 1987). In modern times, the Commerce Clause is used in determining the allowable scope of federal government control. Hence, the federal government often seeks to exercise its powers by offering or encouraging states to implement national programs consistent with national minimum standards, a system known as "cooperative federalism." [6] In this study, though not explicitly stated but generally understood, we are concerned with the promulgation of regulations affecting economic and commercial transactions, based upon laws passed by Congress, establishing federal regulatory agencies, and other measures directing federal agencies and individual states to carryout policy. The American federal system of sovereign states also recognizes individual states rights, again reflecting the nation's republican character.

If the independent free press is considered the fourth estate, administrative regulatory agencies may be considered the fourth branch of government. Our republic is a patchwork of local, state, regional, and national energy delivery organizations. Our system of government is comprised of separate and overlapping federal and state regulatory authorities, established by federal and state laws. Given the complex demands of regulating modern industry, we have created a myriad of federal and state bureaucratic agencies charged with day-to-day regulatory oversight.

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[5] *Federalist Papers, No. 11, "The Utility of the Union in Respect to Commercial Relations and a Navy."*

[6] Cornell University Law School, Legal Information Institute.

The fifty states, in the words of Louis Brandeis, serve as "laboratories of democracy,"[7] each free to experiment with its own twist on how to regulate, sometimes with far too few shared lessons learned.

In the energy arena, the principal regulatory agency at the federal level is the Federal Energy Regulatory Commission (FERC). At the state level, each of the fifty states has its own regulatory commission(s) responsible for developing and carrying out energy policy, similar to the FERC at the federal level. In California the two such principal energy agencies are the California Public Utilities Commission (CPUC) and the California Energy Commission (CEC). Before delving into each of these bureaucratic agencies and discussing their respective roles in the formation and implementation of energy policy, it is useful to describe the complex anatomy of energy delivery in the United States and introduce the theory of public utility regulation. We begin first with a brief description the nation's electric power system.

The Present-Day Electric Power System in the United States

The nation's electric power system is designed such that the three main components of the delivery system -- generation, transmission, and distribution -- work in synch to ensure that supply and demand are balanced instantaneously.

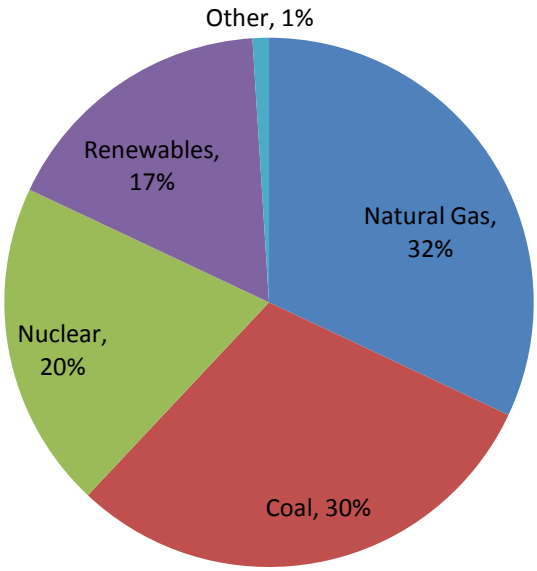
Generation

Electricity is generated from a multitude of sources. According to the U. S. Energy Information Administration (EIA), for the year 2017, about sixty-three

[7] New State Ice Co. v. Liebmann, 285, U.S. 262 (1932)

percent of utility-scale electricity was generated from fossil fuels (coal, natural gas, petroleum, and other gases), about twenty percent from nuclear energy, and about seventeen percent from renewable energy sources, such as hydroelectric power (6.5%), wind (5.6%), biomass (1.5%), solar (0.9%), geothermal (0.4%), bio gases (0.3%), and pumped storage hydroelectricity (0.2%), as depicted in the following chart (rounded): [8]

Figure 3: Major Energy Sources and Percent Shares of U.S. Electricity Generation at Utility-Scale, 2017

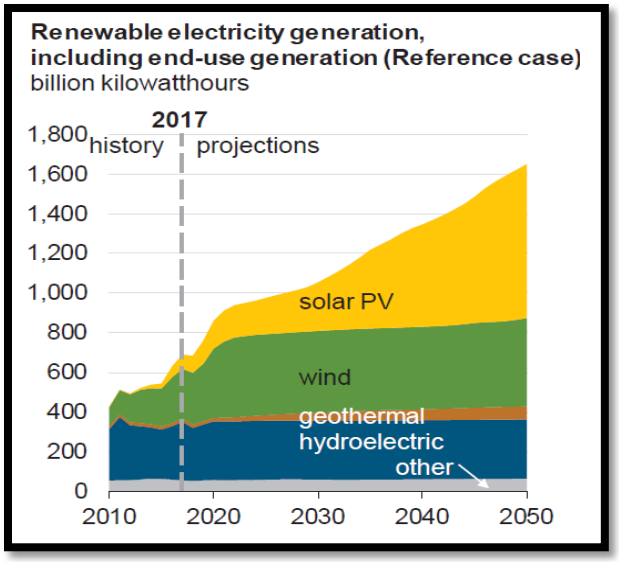


[8] U.S. Energy Information Agency, "Annual Electric Power Industry Report," (EIA-861 data file). For the year 2016, about 65% of electricity generation was from fossil fuels (coal, natural gas, petroleum, and other gases), about 20% was from nuclear energy, and about 15% was from renewable energy sources. The U.S. Energy Information Administration (EIA) estimates that an additional 19 billion kWh (or about 0.02 trillion kWh) of electricity generation was from small-scale solar photovoltaic systems.

In California, the situation is somewhat different. For the year 2017, fossil fuels, mostly natural gas and a small amount of out-of-state coal imports, accounted for about forty-three percent of the electricity generated in the state. This percentage is expected to decline significantly over the next several years largely due to changes in law and regulatory policy to discourage the burning of fossil fuels, which emit harmful greenhouse gasses. California has no in-state coal power plants, and state law now prohibits new power purchase supply contracts that import electricity generated from coal. California's fleet of natural gas-fired power plants is aging and can no longer compete economically with newer, more efficient plants. Moreover, the California's Ocean Protection Plan and the State Water Resources Control Board's "once-through-cooling" policy are aimed at retiring power plants, mostly located along the coast, that use ocean or other sources of fresh water for cooling. Nuclear energy now contributes less than ten percent of the power generated in the state. Once considered a growing resource, and, until a few years ago, twice its current level, nuclear power is now in decline. The San Onofre Nuclear Generation Station (SONGS), jointly owned by the Southern California Edison and San Diego Gas and Electric Companies, was shuttered in 2013, after replacement of its steam generators failed. Nuclear power in the state is anticipated to become extinct by 2025 when Pacific Gas & Electric Company's Diablo Canyon Generating Station, located near San Luis Obispo, is retired. California generates almost twenty percent of its power from

large hydroelectric generating stations. Finally, renewable energy, which accounts for approximately thirty percent of the state's energy supply, is rapidly becoming an increasingly larger percentage of the resource mix due to California's aggressive renewable energy policy goals, as will be discussed in later chapters. Wind and solar are the two most significant sources of renewable energy, and their share of the market is expected to grow as advances in technology reduce production costs. Biomass, small hydroelectric power, and geothermal sources are also part of the renewable energy supply mix, and they too are expected to increase. [9] Looking at the picture nationwide, electricity generated from renewable sources is also expected to increase dramatically over the next several years.

Figure 4: Renewable Electricity Generation, 2017



Source: U.S. Energy Information Administration.

[9] California Energy Commission, Total System Electric Generation, 2017. Percentage of In-state Generation.

Finally, electricity is generated to meet a certain base load of demand around the clock, but energy use varies by time of day and by season. Therefore, generation facilities and technologies must be designed to meet maximum demand, or peak load, and carry enough capacity, i.e. a reserve margin, to meet contingencies, such as planned outages or unexpected drops in production or transmission, to ensure reliability and delivery.

Transmission

The electric transmission system carries high voltage bulk power from the generation source to the local electric distribution system. The electric transmission grid, analogous to the interstate highway system, consists of a vast network of wires that traverse the landscape over long distances. High voltage wires connect to substations, at which point voltage is transformed, i.e. stepped-down, to lower voltage levels for distribution to the end-use consumer. The nation's bulk power transmission system is interconnected regionally to enable power exchanges between regions and to aid in system reliability.

Distribution

If the transmission system is analogous to the interstate highway system, the distribution system is analogous to roads and city streets, carrying power through a complex web of wires from substations to the final destination of homes and businesses.

System Interconnections

In the United States, the power system consists of more than 7,300 power plants, nearly 160,000 miles of high-voltage power lines, and millions of low-voltage power lines and distribution transformers, which connect 145 million customers. At the highest level, the United States power system in the lower forty-eight states is made up of three main interconnections, which operate largely independently from each other with limited transfer capability of power between them.[10]

- The Eastern Interconnection encompasses the area east of the Rocky Mountains and a portion of northern Texas. The Eastern Interconnection consists of thirty-six balancing authorities: thirty-one in the United States and five in Canada.
- The Western Interconnection encompasses the area from the Rockies west and consists of thirty-seven balancing authorities: thirty-four in the United States, two in Canada, and one in Mexico.
- The Electric Reliability Council of Texas (ERCOT) covers most, but not all, of Texas and consists of a single balancing authority.

The network structure of regional interconnections helps maintain the reliability of the power system by providing multiple routes for power to flow and by allowing generators to supply electricity to many load centers. This redundancy helps prevent transmission line or power plant failures from causing interruptions in service.

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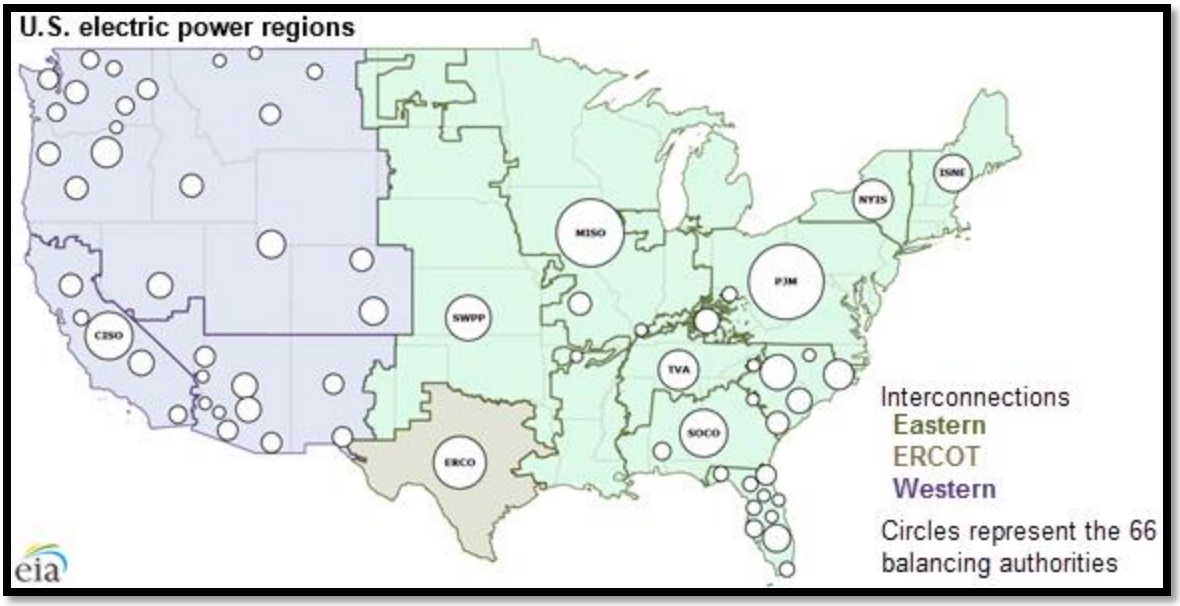
[10] Most of the information contained in this section is taken, some of it verbatim, from the U. S. Energy Information Administration, "Annual Electric Power Industry Report," 2016.

These interconnections describe the physical system of the grid. The actual operation of the electric system is managed by entities called "balancing authorities." Most, but not all, balancing authorities are electric utilities that have taken on the balancing responsibilities for a specific portion of the power system. All of the regional transmission organizations in the United States also function as balancing authorities. ERCOT is unique in that the balancing authority, interconnection, and the regional transmission organization are all the same entity and physical system.

A balancing authority ensures, in real time, that power system demand and supply are finely balanced. This balance is needed to maintain the safe and reliable operation of the power system. If demand and supply fall out of balance, local or wide-area blackouts can result. Balancing authorities maintain appropriate operating conditions for the electric system by ensuring that a sufficient supply of electricity is available to serve expected demand, which includes managing transfers of electricity with other balancing authorities. Balancing authorities are also responsible for maintaining operating conditions under mandatory reliability standards issued by the North American Electric Reliability Corporation (NERC) and approved by the Federal Energy Regulatory Commission and, in Canada, by Canadian regulators. These operators monitor the grid to identify potential problems before a situation becomes critical.

Figure 5: U.S. Electric Power Regions



The Anatomy of Energy Delivery in the United Sates

The electric power system is a remarkable technological achievement, one we largely take for granted, that is until the lights go out. Its high degree of reliability is seemingly miraculous given the complexity of the nation's hybrid energy delivery system. Energy that is generated, transmitted, and distributed is ultimately delivered to consumers, end-users, by a load serving entity (LSE). Energy delivery in the United Sates is carried out principally by three different types of LSEs: investor-owned utilities (IOUs), publicly owned utilities (POUs), and electric cooperatives. In addition, there are federal government-sponsored regional power administrations that sell wholesale power to government and municipal customers. In some parts of the county, notably Texas, Pennsylvania, Ohio, Illinois, and nominally California, the retail market for electricity has been opened to competition and "customer choice," which has given rise to the formation of direct access (DA) providers, also referred to

as energy service providers (ESPs). Finally, in some states, notably, California, New York, New Jersey, and Massachusetts, a new breed of energy delivery is quickly emerging in the form of community choice aggregation (CCA). As shown in the analysis presented in future chapters, community choice aggregation, in California, and direct access, in many other parts of the country, are gaining market share and eroding the historical supremacy of the investor-owned utilities.

The Investor-owned Utility (IOU)

By far the dominant player in our nation's energy delivery system is the investor-owned public utility (IOU). IOUs serve more than two-thirds of the American population and account for more than half of the nation's electricity sale An investor-owned utility is a private, shareholder-owned business enterprise, organized to provide an "essential" or "vital" service in the public interest. Yet, in a capitalist system, the investor-owned utility is beholden to its shareowners and investors, while simultaneously being responsible for fulfilling its public service mission. Historically, investor-owned utilities were vertically integrated, owning and controlling the means of production and distribution, purchasing and delivering energy services to the end-use customer. In essence, during most of our nation's history, investor-owned public utilities maintained a virtual stranglehold on the entire supply chain, from production to delivery. According to orthodox economic theory, a public utility is considered a natural monopoly, devoid of pure economic competition. As such, public utilities are subject to government oversight and regulation as a means of protecting consumers from predatory business practices. The primary

mission of federal and state public utility commissions is to ensure that the public is provided with safe and reliable service at "just and reasonable" rates. The next chapter will present a legislative history of federal energy regulation.

The focus of the regulatory system examined in this study is mainly on the oversight of the investor-owned public utility, because it is the main institutional instrument through which government-sponsored energy policy is implemented and through which the consuming public is most affected by government policy. However, as we shall explore in a subsequent chapter, direct access providers and community choice aggregators in California account for a growing share of the energy delivery system and, as load serving entities, they, too, are subject to many of the same social obligations as the investor-owned utilities.

In California, the three large investor-owned utilities are Pacific Gas & Electric Company (PG&E), Southern California Edison (SCE), and San Diego Gas and Electric (SDG&E). They provide more than three-quarters of the state's electricity supply. In the post-World War II era, PG&E and SCE usually ranked numbers one and two among the country's electric utilities, measured by of annual revenue. Compared to PG&E and SCE, SDG&E is a relatively small utility serving the City of San Diego and its surrounding area, but it is still larger than many other public utilities in the country, which operate in smaller geographical territories or serve a smaller population base. Unlike the three California electric utilities, each of which

operates within a single state, many other electric utility companies in the county operate in multiple state jurisdictions.

Since passage of the Energy Policy Act of 2005 (EPAct 2005), which repealed and replaced the original 1935 Public Utility Holding Company Act (PUCHA) and lifted many of the restrictions that either prohibited or discouraged the formation of utility holding companies, PG&E and SCE have fallen in the national ranking but remain among the top ten electric utilities in the country. Sempra Energy, SDG&E's parent, ranks among the top twenty. (PG&E and Sempra Energy operate as combined electric and gas companies; SCE is solely an electric utility.) California's utilities have been surpassed by other utility holding companies, mainly from Southern and Midwestern states. Consolidation of the industry, through utility company mergers and acquisitions, have been supported by lenient regulatory commissions in these states. Long gone are the days when consumers could easily recognize their local utility, whose name was often tied to a city or an identifiable geographic place. Today, many utility companies are owned by holding companies whose names are not only untethered to place, but are identified only by a string of letters in the alphabet or by a catchy acronym, names like Entergy, XCEL, Excelon, NextEra, or NRG. The investor-owned utility occupies the central role in this study. The other types of load serving entities, described below, appear from time to time along with the investor-owned utilities, but they play a less significant role in the analysis.

The Publicly Owned Utility (POU)

In many jurisdictions energy services are provided by a governmental organization. Publicly owned utilities are organized in various forms including municipal districts, city departments, irrigation districts, or rural electric cooperatives.[11] Collectively, the various types of publicly owned utilities far outnumber investor-owned utilities; they comprise the vast majority of electricity providers nationwide. However, in terms of numbers of customers served, sales, revenues, and electricity generation, investor-owned utilities exceed the publicly owned utilities. The summary chart below provides the relevant comparisons among the various types of load serving entities.

The most common form of public ownership is the municipal utility, which is subject to local control and regulation, usually administered by an elected or appointed governing board. Some municipal utilities are vertically integrated, much like investor-owned utilities, meaning they procure and deliver energy on behalf of their end-use customers. A few municipal utilities own and operate their own transmission systems, while most municipal utilities contract for transmission service from an investor-owned utility and distribute power to their customers over their own local distribution lines.

[11] Sources: California Energy Commission; U.S. Energy Information Agency, "Annual Electric Power Industry Report," Form EIA-861.

California's publicly owned utilities provide approximately one-quarter of statewide retail electricity sales.[12] The largest municipal utility in California is the Los Angeles Department of Water and Power (LADWP). The City of Sacramento, the seat of the state government, is also served by a municipally owned utility, the Sacramento Municipal Utility District (SMUD). Several other California cities have municipal utilities, ranging from small cities, such as Healdsburg and Redding, to mid-sized cities such as Palo Alto, Alameda, and Anaheim. In addition, irrigation districts, formed under state law for the purpose of conveying and storing water, mainly for the state's agricultural industry, as well as to provide potable water for residential consumption, also provide electricity service. The California Department of Water Resources (CDWR) operates the State Water Project (SWP), a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants, including the California Aqueduct, which extends more than 700 miles, two-thirds the length of the state. The State Water Project is the fourth largest producer of energy in the state, using its five hydroelectric generating plants and four hybrid pumping and generating stations. Electricity production is a secondary consideration for the Department of Water Resources, whose primary mission is the delivery of water from Northern California to population centers in Southern California. Like the irrigation districts, DWR is essential for providing water to California's agricultural industry,

[12] Sources: California Energy Commission; U.S. Energy Information Agency, "Annual Electric Power Industry Report," Form EIA-861; California Municipal Utilities Association; American Public Power Association; California Department of Water Resources (CDWR).

mainly throughout the San Joaquin Valley. The public-owned utilities in California are represented collectively by a trade organization, the California Municipal Utilities Association (CMUA). Water agencies, including the irrigation districts, such as Modesto and Turlock, are represented by the Association of California Water Agencies (ACWA).

Electric Cooperatives

A relatively minor, but nonetheless important player in the nation's energy delivery system, particularly in rural and agricultural regions of the country and in native tribal lands, is the electric cooperative. There are nearly one thousand electric coops in the United Sates serving approximately twelve percent of the nation's population.[13] These are independent, not-for-profit entities owned and governed by their members. Electric coops were established in the midst of the Great Depression to bring electrification to rural and often poor and neglected sections of the country to help stimulate economic development and improve quality of life. President Franklin D. Roosevelt, on May 11, 1935, signed Executive Order 7037, establishing the Rural Electrification Administrating (REA). A year later, the Rural Electrification Act was passed by Congress as part of Roosevelt's New Deal. The REA's lending program financed farmer-based cooperatives and provided a model for nonprofit consumer-owned electric cooperatives throughout the country. The coops are represented by

[13] Statistical information available from the National Rural Electric Cooperative Association (NRECA).

the National Rural Electric Cooperative Association. The Tennessee Valley Authority [14] is perhaps the best known rural electric coop. Phillip Selznick's (1966) masterful work, *TVA and the Grass Roots: A Study in the Sociology of Formal Organization*, documents the ambitious goals, and failures, of the TVA to address problems of regional economic development and grassroots mobilization.

Federal Power Agencies (FPA) and Power Marketing Administrations (PMA)

A common feature of investor-owned utilities, publicly owned utilities, and rural electric cooperatives is that they each serve end-use consumers. To complete the picture of the nation's energy supply and delivery system, it is necessary to mention the role that the federal power marketing administrations play in supplying energy to the nation.

There are four federal power marketing organizations under the supervision of the U. S. Department of Energy. Each agency markets hydroelectric power generated from projects developed and operated by the Bureau of Reclamation and the U. S. Army Corps of Engineers. During the Great Depression, the federal government constructed large dams along some of the nation's major river systems, such as the Columbia River. The Bonneville Dam began producing electricity in 1937. The Grand Coulee Dam, which began construction during the height of the Great

[14] Creation of the Tennessee Valley Authority represented an attempt by the progressive wing of the Roosevelt administration to formulate a unified national power program (Funigiello 1973). Franklin Roosevelt appointed David Lilienthal, who had previously served on the Wisconsin Public Service Commission, to the three-person board to oversee the TVA.

Depression in 1932, was completed in 1942, after the United States entered the war. Both of these projects were built to convey water to consumers and to supply each region with a cheap and abundant source of electricity from their associated hydroelectric generating facilities.

The four federal power marketing organizations are the Bonneville Power Administration (BPA) in the Northwest, the Southeastern, the Southwestern, and the Western Area Power Administration (WAPA). Together, they provide over forty percent of the nation's hydroelectricity supply (See table below). While the power marketing administrations do not sell power directly to retail end-use consumers, they are important players in the wholesale market and are mentioned here because of the role that the Federal Energy Regulatory Commission has played since its inception in regulating wholesale energy transactions.

Table 1: U.S. Energy Delivery by Source, 2017

	Number of Providers	Number of Customers	Sales to End Use Customers	Electric Revenue	Electric Generation
POUs (a)	59.5%	14.6%	15.3%	14.8%	9.9%
IOUs	5.5%	68.1%	52.4%	59.1%	37.4%
Coops	26.0%	12.9%	11.3%	11.3%	4.6%
FPAs	0.3%	0.0%	0.8%	0.3%	6.3%
PMAs	8.7%	4.4%	20.2%	14.5%	41.8%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%

Sources: (a) Statistical information available from the American Public Power Association (2018). All other date are for 2015 and available from the U.S. Energy Information Administration Forms EIA-861, EIA-861S for, and EIA-923, and found in summary form in Willrich (2017).

Retail Choice and Direct Access (DA)

The administrations of Margaret Thatcher, in Great Britain, and Ronald Reagan, in the Unites States, ushered in a privatization movement, beginning in the 1970s, that is still evolving today to deregulate markets in various industries. Airlines, banking, trucking, telecommunications, natural gas, and electricity all experimented in one form or another, and succeeded or failed to one degree or another, with privatization and market deregulation. Deregulation, or more appropriately termed, "restructuring" of the electricity industry, fostered opportunities for "customer choice," breaking the traditional grip of the vertically integrated monopoly utility and led to the formation of retail *direct access*. Under direct access, consumers may choose their energy supplier and purchase electricity, i.e. the commodity, from a source other than their local franchise monopoly utility, which typically retains ownership and control over the transmission and distribution of power to the consumer. Retail energy markets are thriving in many states, such as Pennsylvania and Texas; however, in California, direct access was a casualty of the state's ill conceived foray into electricity deregulation, which began in earnest in the late 1990s, leading up to the California Energy Crisis of 2000-2001. In response to the Energy Crisis, the California legislature suspended the direct access program and imposed a cap on enrollment. Approximately thirteen percent of California's customer load is currently served by direct access, and most of that is among the commercial and industrial sectors, whose customers have benefitted from lower commodity prices offered by direct access

providers. Recent legislation lifted the annual cap on direct access, but only for non-residential customers.[15]

Community Choice Aggregation (CCA)

The newest institutional player in the energy delivery system is Community Choice Aggregation (CCA). Community Choice is a program that allows cities and counties to buy and generate electricity for businesses and residents in their geographic areas. Community Choice Aggregators (CCAs) are local, not-for-profit government agencies, akin to municipal utilities, that offer consumers an alternative to traditional investor-owned utility service or direct access. CCAs are de facto utilities. They generate or buy power on behalf of their constituents, but they do not provide transmission or distribution delivery service to consumers. Those functions belong to the franchise investor-owned utility, which has capital investment in and ownership of such facilities. CCAs bear most of the same social obligations mandated by state law and regulation, such as meeting legally established renewable power purchase targets, ensuring that their resource supplies are adequate to meet consumer demand, and providing energy efficiency and special programs or discounts for low income customers. CCAs are not-for-profit organizations, typically organized as a joint powers authority (JPA). A JPA is legal entity created to allow two or more

[15] Senate Bill 237, introduced by California State Senator Robert Hertzberg, was signed into law Governor Brown on September 20, 2018. The bill "lifted" the cap but did not remove it. The bill requires the California Public Utilities Commission to recommend to the legislature, by June 2020, a second reopening schedule for the direct access nonresidential market.

public agencies to jointly exercise common powers, in this instance the provision of electricity services to the businesses and residents under the auspices of the CCA. CCAs are governed by a board comprised of elected officials from the communities they serve. Several states, beginning with Massachusetts and Ohio, have enacted legislation to enable the formation of CCAs. Since the passage of Assembly Bill 117, in 2002, California has experienced a profusion of community choice aggregation programs across the state, mostly instigated by local public officials and community activists as an insurgent movement for local control. Approximately twenty percent of investor-owned utility customers are currently served by a local CCA, and that percentage is expected to increase exponentially at the expense of the incumbent investor-owned utilities. CCAs are represented nationally by the Local Energy Aggregation Network (LEAN) and in California by the California Community Choice Association (CalCCA). The emergence of CCAs, their role as a disruptive force, and what the future holds for California's energy will be explored in the final chapter.

The Theory of Public Utility Regulation

As mentioned earlier, public utilities are considered natural monopolies. Because they require enormous capital investment in plant and equipment there are barriers to entry for new market participants. The first supplier, therefore, has an overwhelming advantage over other potential market entrants. Typically, a public utility is awarded a franchise by the government to operate in a specified geographical area. In exchange for the privilege to have the exclusive right to operate in a franchise service

territory, the utility agrees to abide by a set of rules and regulations established by federal and state laws. The same holds true for a municipal utility, an irrigation district, or a community choice aggregator, each of which operates exclusively in a specified franchise service territory. The idea behind government awarding a franchise to a single monopoly provider is that there are certain economies of scale and economic efficiencies to be gained by allowing one entity to invest in the means of production and distribution to provide utility services. In theory, due to economies of scale, a monopoly provider, protected from competition, can provide service more cheaply and efficiently than if there were several competing providers. Imagine a city street with multiple sets of wires strung overhead, any which way, serving various houses or businesses on the same block. Not only would this be a public eye sore, but a chaotic state of affairs from the point of view of the customer faced with multiple utilities competing for their business. It follows, therefore, that consumers, and hence society as a whole, are better off by allowing monopoly service so long as the ground rules are set, the playing field is level, franchise territories are respected, and the regulator is in place to adjudicate disputes.

This arrangement is commonly referred to as "*the regulatory compact*," an implicit, long-standing mutually beneficial agreement, or social contract, between the state and private industry. The institutional relationship between the regulator and the regulated is embodied organizationally by a public utilities commission and the public utility or load serving entity that provides utility service to end-use customers. The regulatory compact defines the character of the relationship between the two. It

contains a set of unwritten but commonly accepted rules that govern the behavior between government and the regulated industry, following a set of mutually agreed upon expectations, roles, and behaviors that play out in the public regulatory arena.

Under the regulatory compact, an investor-owned public utility is awarded an exclusive franchise to serve a specific geographic territory, it is given an opportunity to recover operational expenses incurred prudently on behalf of its customers, and it is allowed to earn a reasonable return on investment. It is also granted the "power of eminent domain," that is, the right to "take" private property for public use. In return for these privileges, the public utility is subject to price regulation by the regulator, and is obligated to provide safe and reliable service to all customers in its service territory on a nondiscriminatory basis. At the heart of this arrangement is a fundamental economic bargain.

> There is...a long-standing, but unwritten, rule that governs cost recovery and lies at the heart of establishing regulated prices. This rule is known as the regulatory compact. Under the regulatory compact, the regulator grants the company a protected monopoly, essentially a franchise, for the sale and distribution of electricity or natural gas to customers in its defined service territory. In return, the company commits to supply the full quantities demanded by those customers at a price calculated to cover all operating costs plus a "reasonable" return on the capital invested in the enterprise" (Lesser and Giacchino, 2007: 43).

Utilities require large capital investment in plant and equipment to provide service. As regulated entities, public utilities, as noted, are allowed to recover their reasonable costs of providing service and earn a reasonable return on their investments. This system is known as *"cost-of-service regulation."* Under this system, the regulator

determines the amount of money the utility needs to provide service, i.e. its revenue requirement, or the sum total of all operating expenses and capital costs, including a fair return on investment. As described by Lesser and Giacchino (2007), traditional utility regulation sets rates, i.e. prices, based on this kind of revenue requirement determination. The profit utilities earn comes from a return on investment in facilities and other property the utility has purchased or constructed to provide service to its customers, otherwise known as its "rate base." Costs are then allocated to customers classes, and prices are designed to recover costs based on the cost the utility incurs to serve each customer class.

The traditional rate formula is intended to produce a utility's revenue requirement:

$$R = O + (V - D)r$$

The elements of the traditional rate formula are defined as follows:

R is the utility's total revenue requirement. This is the total amount of money a regulator allows a utility to earn.

O is the utility's operating expenses.

V is the gross value of the utility's tangible and intangible property.

D is the utility's accrued depreciation. Combined (V − D) constitute the utility's rate base, also known as its capital investment.

r is the rate of return a utility is allowed to earn on its capital investment or on its rate base.

Traditional cost-of-service regulation, based on the utility's own costs, encourages capital investment because it provides a rate of return on rate base. Therefore, the more the utility invests, the more profit it earns. If applied intelligently with proper regulatory oversight, this approach engenders a stable environment under normal circumstances. This system, however, can lead to perverse outcomes. For one, it encourages a "cost-plus mentality" that can lead to a bloated bureaucracy, avoidance of risk and innovation, and management complacency. In addition, traditional cost-of-service regulation, critics argue, encourages overinvestment and "gold platting" the system, thus driving up customer costs, sometimes causing backlash and revolt from insurgent, organized consumer interests, as we shall later see, thus creating a climate for competition and even encouraging customers to bypass or flee utility service.

To avoid these unintended consequences, an alternative to cost-of-service regulation has been tried by regulators in various jurisdictions. Instead of allowing a utility to earn its profit based on its own costs, earnings are calculated based on external economic conditions and the utility's performance in serving its customers. The most simple formula for *performance-based ratemaking* (PBR) is as follows:

$$P = (RPI - X)$$

where

P is the price in time *t*.

RPI is the rate of inflation.

X is the efficiency factor (X-factor).

Under this system, prices are set with regard to economic conditions, measured by the overall rate of inflation (RPI), and a required growth in efficiency, the X-factor (Machek and Hnilica, 2012:223-230).

Another form of performance-based ratemaking is known as "price-cap" regulation, in which prices are set by external conditions or tied to an independent index, such as the consumer price index (CPI). Under PBR, utilities are thus encouraged to seek improvements in their operations, to invest in new technologies, and to find ways to improve customer service. In addition, there may be a set of objective standards to which the utility is held accountable and which may increase or decrease utility profits based on whether the utility meets its benchmark targets. For example, the utility may be expected to answer customer calls or meet service appointments in a specified period of time, or to achieve a certain percentage ranking on customer service satisfaction surveys, sometimes benchmarked against company peers. The subject of cost-of-service and performance-based ratemaking is discussed in Chapter 4 in the context of political conflict and competition.

The Organizational Framework of Energy Regulation

Public utility regulation is carried out, for the most part, at the state level by public utility or public service commissions. However, the basic principles of public utility regulation are rooted in federal law. Chapter 3 presents a survey of the landmarks of legislation that form the legal foundation for the regulation of the energy industry, and offers an historical exploration of key federal legislative measures relevant to understanding the evolution of the regulatory state. First, however, it is necessary to

describe the organizational framework of energy regulation at the federal and state levels by introducing the principal regulatory authorities relevant to this study -- the Federal Energy Regulatory Commission (FERC) and California's two principal energy regulatory agencies, the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC).

Energy Regulation at the Federal Level

The Federal Energy Regulatory Commission (FERC) is an independent regulatory agency within the U. S. Department of Energy. It administers federal laws and regulations governing energy matters, including the interstate sale and transportation of natural gas, interstate electric power transmission, and the sale of electric power for resale. The FERC is also responsible for licensing the nation's hydroelectric projects.

Federal regulation of the private power industry stems from the Federal Water Power Act of 1920, whose original purpose was to coordinate the development of the nation's hydroelectric projects. The Federal Water Power Act created the Federal Power Commission (FPC) as the licensing and regulatory authority for hydroelectric projects, and for regulating interstate commerce of the electric power and natural gas industries. In 1935, the law was renamed the Federal Power Act, and the FPC became the Federal Energy Regulatory Commission (FERC), whose authority was expanded to include all interstate electricity transmission and wholesale power transactions. Also, that year, Congress passed the Public Utility Holding Company

Act (PUHCA), also known as the Wheeler-Rayburn Act. Born out of the trust-busting fervor following the Wall Street market crash of 1929 and the Great Depression, Congress passed the Public Utility Holding Company Act to facilitate the regulation of public utilities by the states and to prevent public utility holding companies from engaging in unregulated economic activities that would compromise a utility company's ability to carry out its public service functions. As market and economic conditions evolved over the years, as will be discussed in subsequent chapters, the Public Utility Holding Company Act eventually became anachronistic, and Congress thus repealed PUCHA with the enactment of the Energy Policy Act of 2005. To this day, the FERC's authority for regulating the electric power industry is derived from the Federal Power Act of 1935 and subsequent amendments to the law, which will be examined further in Chapter 4.

As noted above, the FERC regulates interstate commerce related to the transmission and sale of electric energy, but its broad oversight authority includes, among other things, setting wholesale rates, siting interstate transmission facilities, enforcing rules governing the physical interconnections between power producers and transmission facilities for the ultimate distribution of energy to consumers under the purview of state regulation, maintaining mandatory standards for electric reliability, overseeing the issuance of securities and reviewing mergers and acquisitions, enforcing regulatory requirements, and monitoring and investigating markets to guard against market manipulation and abuse to protect consumers. The agency is governed by a five-member commission, appointed by the President of the United States, for

staggered five-year terms, with the advice and consent of the U.S. Senate. No more than three sitting commissioners may be from the same political party.

The FERC's authority to regulate commerce is embodied in Section 205 of the Federal Power Act. Therein lies the agency's authority to regulate prices and the terms and conditions for interstate electricity transmission and wholesale electricity sales. Rates and the terms and conditions of service must be “just and reasonable” and must not be "unduly discriminatory or preferential.” There is a large body of case law, developed over decades, that defines these terms. In essence, rates, to be deemed "just and reasonable," must be "cost justified" and based on market conditions. In addition, similarly-situated customers must be treated in a similar fashion. Discrimination without reason is prohibited. This does not mean that all customers must be treated in exactly the same manner. Differential treatment is not inherently prohibited; it must, however, be cost justified. The standards embodied in the Federal Power Act are applied universally by all public utility commissions at the state level.

Besides its economic regulatory function, the FERC has the authority to set the nation's energy policy agenda following Congressional approval. The FERC establishes policy through a formal public process known as *rulemaking*. More will be said about the evolution of national energy policy promulgated by the FERC through an examination of key legislative measures in the next chapter.

Energy Regulation in California

While the FERC may set energy policy broadly for the county as a whole, much of the responsibility for implementing energy policy lies with the states, and, indeed, individual states have the authority to instigate policy on their own initiative. In California, the two principal regulatory agencies charged with carrying out energy policy are the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC). Each agency has its origins in legislation, and, in the case of the CPUC, also in the state constitution. Each agency has its own unique set of responsibilities and legislative mandates. When it comes to policy formation, their responsibilities sometimes overlap and conflict, while at other times the two agencies cooperate and act in concert. These shifting conflicts and alliances have as much to do with different bureaucratic cultures as with contradictions and ambiguities inherent in law and the influence exerted on each agency from the pressures of outside interests.

The California Energy Commission (CEC), whose official name is the State Energy Resources Conservation and Development Commission, was created by the Warren-Alquist Act, which was passed by the California Legislature in 1974, and signed into law by Governor Ronald Reagan in the final year of his term. The Warren-Alquist Act became effective on January 7, 1975, and Governor Jerry Brown, during his first term as governor, appointed the first members of the Energy Commission.

The CEC is California's primary energy policy and planning agency. It is responsible for forecasting future energy needs, promoting energy efficiency through building and appliance standards, and supporting renewable energy technologies. It also has the authority to license and site electric generating facilities. The CEC is led by a set of five commissioners who serve five-year staggered terms. The commissioners must each represent a specific area of expertise: law, environment, economics, science or engineering, and the public at large.

As the principal energy policy planning agency for the state, the CEC performs this duty through its biennial Integrated Energy Policy Report (IEPR). The legislature mandated (Senate Bill 1389, 2002) that the Energy Commission, every two years, adopt and transmit to the governor and legislature a report on trends and issues concerning electricity, natural gas, transportation, energy efficiency, renewables, and public interest energy research. The Report is intended to serve as a potential source of new energy legislation.

The California Public Utilities Commission (CPUC) regulates essential utility services for electricity, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. Because the main topic of this study is the energy industry, and, more specifically, the regulated electricity industry, little if any attention will be paid to the other industries regulated by the CPUC, expect where they provide useful insights or lessons for the energy sector.

The California Public Utilities Commission was established by constitutional amendment in 1912. However, its origins may be traced to the California Office of the Commissioner of Transportation, which was established in 1878, and to the Railroad Commission, which was created by an amendment to the State Constitution, in 1879, as part of the Progressive Era movement to reform government. In the early decades of the twentieth century, railroads dominated California politics. A populist backlash against the Central and Southern Pacific Railroads and the "Big Four" Robber Barons -- Leland Stanford, Collis Huntington, Mark Hopkins, and Charles Crocker -- led to a ballot initiative establishing the Railroad Commission as a means of reigning in the power and influence of the railroads (Ambrose 2002). Under the guidance of Governor Hiram Johnson, a Progressive Era reformer, the state legislature, in 1912, passed the Public Utilities Act, expanding the commission's regulatory authority to include natural gas, electric, telephone, and water companies, as well as railroads and marine transportation companies. In 1946, the commission was renamed the California Public Utilities Commission (Hallett 1912; Starr 2011; Zanjani 2014). [16]

The agency is governed by a five-member commission appointed by the governor and confirmed by the state senate, for six-year staggered terms. Like the Federal Energy Regulatory Commission, the CPUC is staffed by professional economists,

[16] Kenneth Starr, California State Librarian and Professor of History, University of Southern California, was commissioned by the CPUC to write a brief history of the agency to commemorate its 100th anniversary.

engineers, administrative law judges, accountants, lawyers, and other industry specialists.

The CPUC's exercises its regulatory authority in three broad functional areas: adjudicatory, legislative, and economic/rate setting. As a quasi judicial body, the commission adjudicates complaints between consumers and the utilities it regulates through a quasi-judicial administrative law process. The commission has powers of enforcement to ensure compliance with its orders and rules, and it has the power to investigate possible violations of state law or its own orders and rules.

The rate setting function lies at the heart of the commission's economic regulatory authority. Setting prices for energy services is the primary means by which the commission touches consumers and affects the economy of the state. The commission wields enormous power over the state's economy. If California were an autonomous country, its economy would rank as the fifth largest in the world, ahead of Great Britain, Brazil, India, and France. The commission's economic powers reach the nearly forty million people of California through its policies, decisions, and the prices it sets for utility service.

As a policy making body, the commission can legislate by creating programs or by setting goals for the utilities it regulates. Legislators use their powers of taxation to set social policy. However, taxation is not always the easiest or most expedient way to create social policy. The legislative process is cumbersome, and elected officials risk citizen revolt at the ballot box when they try to raise taxes, especially for

unpopular or controversial measures. Therefore, utilities can serve as a convenient surrogate, and customer rates are often used as a hidden form of taxation for mandating social policy. Public utility regulators use their rate setting authority in this manner to establish or advance public policy objectives. They establish programs for the utilities to administer under their watch and set goals for the utilities to meet. The utilities, in turn, serve as the instrument through which policy is implemented. Numerous examples of this method of implementing social policy are presented in future chapters, but one example may be useful here.

On February 2, 1977, President Jimmy Carter, donning a cardigan sweater, delivered a fireside chat to the American people. Only two weeks in to his presidency, the newly elected commander-in-chief wanted to inform the county of his administration's plans. Much of the content of Carter's speech has long been forgotten, but the symbolism of the sweater and the burning fire place have endured along with one element of the speech: the need to develop a comprehensive national energy policy with an emphasis on conservation. That speech, and the administration's efforts, led by the Department of Energy, which was formed later that year, set in motion a nationwide push to encourage energy conservation and energy efficiency. State commissions and their regulated utilities across the nation began in earnest to develop conservation programs.

In California, the CEC led the way with program development, and the CPUC used its regulatory authority to require the utilities to establish and administer

conservation programs. Funding for these programs, however, was a potential obstacle. How were these programs to be paid for? Who would benefit -- the customer who would take advantage of the programs, i.e., the direct beneficiary, or society as a whole, the indirect beneficiary? Would Congress appropriate funds and grant monies to the states to pay for the programs, or would state legislators need to sponsor legislation and raise funds through taxation to pay for the programs? Legislators and regulators found an elegant solution to this problem, one often repeated to advance a myriad of new social programs: government could avoid the messy legislative taxation process and instead raise the necessary funds either by adding a surcharge to customer bills or by embedding program costs in customer rates. Just as legislators prefer not to raise taxes, public utility commissioners prefer not calling attention to rate increases they initiate, even for a worthy cause supported by the President of the United States, who called the energy crisis the "moral equivalent of war." A surcharge shown on each customer's bill would be transparent, but hiding program costs by embedding them in the rate structure would offer the path of least resistance.[17]

This is but one example of many that illustrates how the regulators acts on their own accord, using their bureaucratic position of power, to advance policy in the

[17] An insightful illustration of this type of regulatory intervention may be found in Barkovitch's (1989) study of energy conservation programs, discussed in Chapter 1. Another such example is the clean air vehicles program, launched in the 1990s, which provided utility incentives in the form of rate base earnings opportunities by encouraging investment in fueling and charging stations and by offering rebates to customers to encourage the purchase of natural gas and electric vehicles.

public interest through the instrument of the regulated entity. The rationale behind such publicly sponsored incentive programs is to jump start an industry or to substitute a public function where private capital cannot or will not step forward with investment. Money to fund these programs comes in the form a of a "hidden tax" in customer rates.

The key lesson gleaned from this one example is that legislators and regulators have enormous powers derived from their bureaucratic stations, and they wield such powers through bureaucratic actions that have a profound effect on society. The very structure of the regulator-regulated relationship allows for the government to create policy and to implement policy through the instrument of the regulated entity. How the public and vested interests organize to participate in the regulatory process to influence policy outcomes; to further their own economic, political, or ideological interests; or to impede the interests of others, will be examined in future chapters. Now, with the organizational landscape having been sketched, the next chapter will trace the legislative history of key measures that constitute the institutional and structural framework that form the underlying development of the nation's energy policies.

CHAPTER THREE

LANDMARKS OF LEGISLATION

This chapter traces the legislative history of the key measures that form the structural framework for the nation's energy policies. The survey begins with the Federal Power Act of 1935 and follows the development of energy policy though an inventory of key federal legislative measures. It provides a history of the major legislative and administrative initiatives that shaped the nation's energy policy agenda. The focus in this chapter is on federal-level energy legislation. Subsequent chapters examine some of the key legislative measures and regulatory initiatives that shaped energy policy in California. The chapter sets the institutional framework, marking the location of interest group conflict and change in the energy policy arena. The legislative measures examined here, at both the federal and state levels, set in motion forces that fundamentally challenged the dominant position of the monopoly utility and, over time, shook the foundation of the regulatory compact.

Holding Companies and The Early Years of Regulation

By the late nineteenth century, electric power stations were being introduced in England and the United States. In 1882, Thomas Edison's Electric Light Company developed the first steam powered electric generating station on Pearl Street in New York City to power electric lamps for fifty-nine customers. A few years later, in 1886, George Westinghouse built the first practical transformer-based alternating current power system at Great Barrington, Massachusetts, and shortly thereafter

began installing AC systems, using Nicola Tesla's engineering design, to compete with Edison. By 1888, the electric power industry was flourishing, and power companies had built thousands of power systems in the United States and Europe, dedicated to providing electric lighting (See Jonnes 2003 and White 2007).

Thomas Edison, George Westinghouse, Nikola Tesla -- inventors whose legacies and companies which bear their names are still familiar to us today. However, the less-well-known Samuel Insull, Edison's personal secretary and business manager, was responsible, more than these three giants of industry, for creating the business structure that ultimately led, for nefarious reasons, to the modern regulatory structure that governs the utility system we know today. With the financial backing of J. P. Morgan, Sam Insull understood that if electricity were cheap, it could be used to run machinery to expand the economy and power appliances to improve the quality of life and standard of living for the American middle class. Insull was a pragmatist. He promoted the notion that a utility was a natural monopoly, and, by necessity, required regulatory control and supervision. He believed that if there were set ground rules, he could operate freely within this system to build his empire. But his real genius was to devise the financing system and to consolidate the myriad of small electric companies into *holding companies* (McDonald 1958; Wasik 2006; Lambert 2015).

A holding company typically owns a controlling interest in an operating company whose stock it holds, and "usually confines its activities to owning stock in, and

supervising management of, other companies" (Black ,1990:731). The holding company structure enabled Insull to leverage his assets and control a vast empire of utility companies. By 1932, the eight largest utility holding companies controlled seventy-three percent of the investor-owned electric industry (Hyman 1992; Wasik 2006; Mahoney 2011). This scheme worked well for Insull for a time, until his house of cards collapsed during the Great Depression.

Utilities proved to be fertile ground for the holding company structure to flourish during the formative years of the electric power industry when they were able to operate virtually unchecked. Competition was fierce and many small utility companies consolidated and merged in an attempt to remain solvent. However, after merging, many of the companies were short on cash to cover operating expenses and to invest in infrastructure and facilities. In order to raise needed cash, utility companies offered securities to the public, in the form of stocks and bonds. Yet, the holding company, through its majority ownership of stock, controlled the utility itself. This structure led to several forms of abuse.

One typical form of abuse was "pyramiding." At the bottom of the pyramid was an operating utility company with generation and distribution assets. A separate company would gain control of the utility company by purchasing and "holding" a controlling interest of the utility company's stock. The holding company would use the operating company's capital to finance a controlling interest in another company by leveraging the capital of the operating company, thus creating a portfolio of

operating companies under the holding company. Operating company earnings above a minimum level would flow upward to the holding company, resulting in a high rate of return. Conversely, however, earnings below target levels would result in no dividend payments, thus shielding the holding company and its owners from losses.

Insull also used another technique, known as "write-up," to enrich himself and his fellow investors. A write-up is an accounting tool used to increase the book value of an asset when its value is less than fair market value. One method of enhancing the value of a holding company is for an operating subsidiary company to sell an asset to an another company or, better yet, to an affiliate, at a higher price that the asset's book value. The holding company's book value is thus increased. This step can be repeated as an asset can be sold and resold to another affiliate, increasing the book value of the holding company even further, without any real economic value being created in the process.

A third form of abuse was charging excessive fees to operating companies for the services rendered by the holding company. Often, such fees were based on a percentage of the operating company's revenues regardless of the holding company's cost to provide the services. These fees were usually hidden and buried in the rates charged to consumers. Awareness of these abuses sounded the death knell for the kinds of public utility holding companies that Insull had crafted in an era devoid of rules and regulatory enforcement. Of course, it helped that the Great Depression arrived, thus precipitating the collapse of Insull's house of cards.

Legislation to curb anticompetitive economic behavior and to protect the competitive free market economic system has its origins in the Sherman Antitrust Act, passed by Congress in 1890. The Sherman Act was the first federal statute that outlawed monopolistic business practices (Springstein 1983; also see U. S. Energy Information Administration 1998). One of the Sherman Act's main provisions was intended to curb the concentration of power and prohibit business practices that would restrain open free trade harmful to consumers. Weinstein (1968) has shown how big business supported the kind of regulation embedded in the Sherman Antitrust Act. His study of the National Civic Federation (NCF) documented the role that the NCF played in shaping the interpretation and application of the Sherman Act to preserve corporate dominance.

The NCF, organized in 1900, "was primarily an organization of big businessmen, although established in the principle of tripartite (business-labor-public)" (Weinstein, 1968: xv). An interesting chapter in the history of the NCF was its creation, in 1905, of the Commission on Public Ownership of Public Utilities. The purpose of the commission was to examine the implications of public verses private ownership of electric utility systems.[18] One of the early leaders of the NCF was none other than

[18] Weinstein notes that in the early decade of the twentieth century, Wisconsin, New York, and Massachusetts were among the states that established public utility laws and regulatory commissions, which served as a template for the principles established in the Commission on Public Ownership of Public Utilities. In fact, the work of the commission was greatly influenced by John R. Commons, the labor historian and economist at the University of Wisconsin, who drew from his experience on the commission to draft legislation that became the Wisconsin Railroad Commission (Cudahy and Henderson 2005).

utility magnate Samuel Insull, whose views, not surprisingly, were reflected in the commission's three-volume report. As Weinstein describes,

> "Among the principles put forward were that public utilities are best conducted by legalized, regulated monopoly, that franchise grants to corporations should be for fixed periods and subject to purchase at fair value, that municipalities should have the power to enter the field of municipal ownership upon popular vote, and that utilities should be subject to regulation and examination under a system of uniform records and accounts by an independent administrative agency. The report of the Commission established a general framework for regulatory laws" (1968: 25).

As noted above, it was Samuel Insull himself, who recognized the usefulness of regulation to protect private monopoly. He understood that it was only a matter of time before regulation over the utility industry would come about. In endorsing the principles articulated in the Commission on Public Ownership of Public Utilities report, Insull proclaimed that "it is better to help shape the right kind of regulation than to have the wrong kind forced upon [you]" (Weinstein 1968:87).

The Clayton Antitrust Act of 1914, which also bears the fingerprints of the National Civic Federation, further strengthened federal antitrust law by, among other things, protecting consumers from price discrimination, prohibiting exclusive dealing, and establishing rules governing corporate mergers and acquisitions, matters central to subsequent legislation regulating the utility industry. Another provision of the Clayton Antitrust Act, though not a subject here, was to give safe harbor to labor union organizing activities. The Clayton Antitrust Act, together with Federal Trade Commission Act of 1914, which established the Federal Trade Commission (FTC) to

enforce provisions of antitrust law, were important antecedents to the federal legislation instituted to regulate the utility industry at the state level.

In 1928, the Federal Trade Commission initiated an investigation of utility holding companies. As Mahoney explains,

> "...scrutiny and criticism became much more intense in the wake of the 1929 market crash, which hit highly leveraged holding companies particularly hard. The Insull utility group, one of the country's largest, was unable to meet its obligations. Its creditors forced it into bankruptcy in 1932. The Insull collapse, which the press called "the biggest business failure in the history of the world, triggered a political reaction" (2011:11).

The crisis caused by Insull's financial schemes, described above, along with the stock market crash in 1929 and the Great Depression, drove many of the holding companies into default and bankruptcy. [19] As a consequence, investors were shortchanged and utility customers saw their services deteriorate, if they were not abandoned altogether.

It was not until the New Deal, however, that measures were enacted to curb the most egregious excesses endemic to the holding company structure. President Roosevelt set his sights on the abolition of public utility holding companies. In July 1934, he established a National Power Policy Committee chaired Harold Ickes, now secretary of the interior, to study the public utility industry with the aim of proposing reform legislation (Funigiello 1973). The work of the committee resulted in the

[19] In a provocative essay, Georg Rilinger (2018) uses the "theory of complex secrets" to explain the creation and collapse of Insull's holding company "Ponzi scheme."

passage of two important measures: the Public Utility Holding Company Act (PUHCA), also known as the Wheeler-Rayburn Act, and the Federal Power Act. Both of these landmarks of legislation, passed by Congress in 1935, ushered in the reforms that gave the federal government regulatory oversight of the public utility sector.

Passage of the Wheeler-Rayburn Act, however, was hard fought, as Paul W. White (2007) tells in his political history of PUCHA. The original proposed bill, drafted by Ben Cohen and Tommy Corcoran, two of Roosevelt's advisors, stopped short of banning holding companies. Unsatisfied, the President instructed his two advisors to revise the draft to require all holding companies to register with the Securities and Exchange Commission, which would henceforth regulate the issuance of their stocks and bonds. The major bone of contention was a "death sentence" clause inserted in the draft stating that utility companies should voluntarily get rid of their holding companies, or "on January 1, 1940, the SEC would be empowered to compel the dissolution of every holding company which did not establish an economic reason for its existence. As a practical matter, most holding companies would be dismantled" (Hardeman and Bacon 1987:171).

Utility companies were caught by surprise. They were expecting the law to regulate holding companies, not abolish them. The industry fought back hard by mobilizing an unprecedented lobbying campaign. They organized individual investors, banks, and other industrialists, and with the leadership of their trade

association, the Edison Electric Institute, launched a public relations campaign claiming that the proposed legislation was as assault on "free enterprise." Their propaganda "aimed at misleading million of investors into believing their entire investments would be lost if the bill became law" (White 2007). Roosevelt continued to fight. He took his cause to Congressional leaders, arguing that the bill was needed to protect individual investors. Both Houses of Congress debated the proposed legislation. In the end, the utility industry proved too powerful and the "death sentence" clause was deleted from the final text, but Roosevelt, and the skillful political maneuvering of Senator Wheeler and Representative Rayburn, succeeded in passage of the bill. Thus, PUCHA was placed into law to prevent a recurrence of these events and to regulate the public utility industry going forward.

One significant feature of the original draft of the Public Utility Holding Company Act, as noted, was expressly designed to bring about the dissolution of the utility holding company structure. However, in its final form, PURPA contained conditions which restricted the formation of holding companies. It stated that an electric utility holding company could serve in only one state or in adjoining states, and that its operations must be interconnected. It confined a holding company to a single, integrated system. In addition, it required an operating utility under a holding company to be separately incorporated and to render service at cost. The Federal Power Act further strengthened these provisions by granting authority to the Federal Power Commission to oversee and enforce the laws. Later, state public utility commissions adopted rules to govern transactions between a parent holding company

and its subsidiaries and the financial transactions among its subsidiaries and affiliates. These measures and the force of the regulatory regime were designed to prevent self dealing and to ensure that the consuming public was charged for utility services at rates deemed to be "just and reasonable" and cost-based. These safeguards had the effect of shoring up the financial structure of the utilities, thus fostering a stable environment for investment and the orderly provision of utility service that, by and large, continues today.

The Public Utility Holding Company Act and the Federal Power Act accomplished their main objectives by maintaining order in the troubled energy sector, mainly through their powers of enforcement. The period between the late 1930s and the nation's energy crisis in the 1970s was, generally, a time of relative stability in the energy marketplace. The federal government, from time to time, did, however, enact legislation to address specific policy concerns. For example, Congress, in 1936, passed the Rural Electrification Act to assist with the electrification of rural America by creating rural electric cooperatives to aid underserved impoverished areas of the county and to promote regional economic growth and development. Congress also conferred authority upon the Federal Power Commission, subsequently renamed the Federal Energy Regulatory Commission, to regulate interstate natural gas pipelines with the passage of the Natural Gas Act, in 1938.

During this period of prosperity and relative stability in the energy sector, the regulatory compact enabled the utilities to go about their business unfettered. As long as they played by the rules, regulators were content to stay out of the way and let the

utilities do their job. After World War II, the utilities continued to invest enormous sums of capital in new infrastructure to keep pace with rapid economic growth, especially in the West as population moved westward (Coleman 1952). After all, progress during this period was the nation's most important product. Nevertheless, forces were emerging that upset the complacency of the regulatory compact and the regulatory regime that supported it. The national energy crisis changed all of that.

The National Energy Crisis and Modern Regulation

The Arab oil embargo, in 1973, and the resulting shock in gasoline prices caused public alarm and a national energy crisis. The federal government enacted a series of legislative measures in response. First came the Energy Policy and Conservation Act of 1975 (EPCAT), which was an attempt to create a comprehensive approach to federal energy policy. Section 2 of the Act laid out its primary purposes: it granted authority to the President to impose rationing and to reduce the demand for energy through the implementation of energy conservation programs. Furthermore, it created the country's Strategic Petroleum Reserve to mitigate the impact of supply interruptions. It aimed to increase the supply of fossil fuels by providing price incentives for production. It established fuel economy standards for automobiles. And it even aimed to increase the availability of the nation's abundant coal reserves to reduce reliance on petroleum and natural gas resources, which, at that time, were largely dependent on foreign imports. The goal of increasing the supply of fossil fuels and exploiting coal reserves would, in many quarters, be considered an anathema today. But the nation's mindset in response to a perceived crisis, one that

hurt the consumer pocketbook, was nowhere near as mature as it is now. As we shall see, public opinion and government intervention through legislation and state sponsored programs to reduce dependence on fossil fuels in favor of renewable sources, along with energy conservation and efficiency programs, were just beginning to evolve. Along the way, however, efforts were underfoot that began to change the market for energy and threatened the grand bargain between the regulator and the regulated industry in ways that shook the market.

California, too, took steps to respond to the national energy crisis. The California legislature created the Energy Commission through the passage of the Warren-Alquist Act, in 1974,[20] as noted in the previous chapter. The CEC's responsibility for long-term energy planning at the state level was akin to the federal government's desire to create a comprehensive approach to national energy policy under the guidance of the FERC. While the CEC's impact could not, by definition, have the broad reach of the federal government, it nonetheless marked a major turn of events in the development of California's energy landscape. The CEC's aggressive building and appliance standards became the envy of the nation.[21] To take but one example, the "Energy Star" program, administered jointly by the federal Environmental Protection Agency

[20] The Warren-Alquist Act (1974), named after its sponsors, Assembly member Charles Warren and State Senator Al Alquist, is the legislation that gave statutory authority to the California Energy Commission, formally named the State Resources and Development Commission.

[21] California's Code of Regulations Section "Titles 20 & 24 - Public Utilities and Energy" concerns energy conservation regulations and efficiency standards for buildings and appliances.

(EPA) and the U. S. Department Energy (DOE), was inspired by the CEC's appliance efficiency standards. California's efficiency standards often set the bar for manufactured products nationwide. Because of the size of the California market, it is rational for a manufacturer of major consumer appliances to adopt one standard for nationwide marketing and sales. Similarly, California's low carbon fuel standard and vehicle emissions standards, adopted at the national level by the EPA, are patterned after California's progressive environmental policies.

The Public Utility Regulatory Policies Act of 1978 (PURPA)

Building on the momentum of the Energy Policy and Conservation Act, Congress, state legislatures, and federal and state regulators were emboldened to push for greater control to dictate energy policy. The most significant piece of legislation enacted affecting the energy industry during this period was the Public Utility Regulatory Policies Act of 1978 (PURPA), whose main purpose was to promote energy conservation by reducing demand and to promote greater use of domestic energy and renewable energy supplies (Richardson and Nordhaus 1995:62-68; William & Mary Environmental Law and Policy Review 1976; The Pennsylvania State University 2015: 12-14). PURPA set forth rules for state public utility commissions to follow in determining customer rates, e.g. using avoided cost principles, and it set regulatory standards for public utilities under state jurisdiction.

As noted, the Federal Power Act of 1935 set ratemaking standards to protect consumers from wanton business practices. PURPA, which amended the Federal

Power Act, built upon its predecessor by adopting six ratemaking standards, spelled out in Title I - Retail Regulatory Policies For Electric Utilities. First, rates charged to each customer class, to the extent possible, should reflect the actual cost of providing service. Second, PURPA mandated the elimination of the declining block rate structure, in which the per-unit price of energy *decreases* as energy consumption increases. In an inverted rate structure, in contrast, the price for each extra unit of energy *increases* as consumption increases. Eliminating the declining block rate structure was seen as a price signal to encourage energy conservation. Third, PURPA called for the adoption of time-of-use rates to reflect the cost of producing energy and providing service, which vary by time of day. Fourth, PURPA instructed that rates should vary by season to the extent that costs vary seasonally. Fifth, PURPA set forth the principle that utilities should offer interruptible rates to industrial and commercial customers. An interruptible rate option typically involves an offer for a price discount to a customer in exchange for the ability of the utility to interrupt service for a period of time to save cost when production costs are high or to avoid a large-scale outage in the event of a short-term supply shortage or during an emergency. Sixth, and finally, PURPA encouraged utilities to offer cost-effective load management options, a demand-side strategy to encourage customers to shift their energy use away from high cost periods to times of the day when the costs to produce energy are lower.

Other provisions of PURPA mandated utilities to create integrated resource plans (IRP), giving consideration to a full range of alternatives for both the supply and the

demand sides of the equation, to include purchases of renewable energy sources, and to implement conservation and efficiency measures. It required utilities to file and update such plans regularly with their state commissions. Furthermore, PURPA gave authority to state commissions to allow utilities to collect investments in customer energy conservation and demand-side management programs in customer rates. It also encouraged utilities to make cost-effective improvements and energy efficient investments in their own power generation and delivery systems, while authorizing state commissions to allow utilities to pass through such costs to their customers. California embraced this ambitious agenda, and the CEC and the CPUC went about their work to implement PURPA in earnest.

Altogether, these measures were intended to reinforce basic consumer protections, discourage the profligate use of energy, and increase public awareness about the virtues of the wiser use of energy through conservation and efficient practices. However, the most profound impact of PURPA on the energy industry was what it did to support the development of a new class of power producers called qualifying facilities (QFs), thus empowering them to challenge the dominance of the incumbent utilities. Title II of PURPA granted authority to the FERC to adopt rules encouraging the development of independent, nonutility power projects (IPPs), thus introducing *competition* to the monopoly utility over the supply of energy.

From the perspective of the Department of Energy

> "PURPA's primary objective was to encourage improvements in energy efficiency through the expanded use of cogeneration and by creating a market

> for electricity produced from unconventional sources like renewables and waste fuels. While preserving the industry's vertically integrated structure, PURPA aimed at a modest modification by adding the obligation to look to nontraditional suppliers in conjunction with utilities' existing and proposed generating capabilities. No changes, therefore, were postulated to the cost-based pricing of electricity regulation. Yet, by encouraging nonutility power generation and by making such output easily marketable on a wholesale basis, PURPA's provisions introduced several, far-reaching operational and regulatory changes in the electric utility industry. In the evolving wholesale market for electric power, PURPA's most notable contribution was to introduce competition while taking future supply options into account" (Energy Information Administration 1996).

The impact of PURPA went far beyond the modest claims of the Department of Energy. PURPA established obligations for utilities to purchase energy supplies from two types of QFs: small power producers and cogeneration facilities. Small power producers include facilities that generate power by using renewable resources, such as wind, solar, and hydropower; geothermal energy; or renewable fuels such as biogas, landfill gas, and waste byproducts. Cogeneration plants produce thermal energy, in the form of heat or steam, that is used to produce electric energy. PURPA and FERC rules required electric utilities to interconnect to and purchase power from QFs on a nondiscriminatory basis. PURPA also exempted QFs from most state and federal regulations that applied to retail public utilities because of their status as independent wholesale providers.

The guidelines set by PURPA were to be enforced by the FERC and administered by state regulatory commissions. One such important guideline affected the price utilities were obligated to pay QFs for the power they produced. The rule adopted by

the FERC was to set prices at "avoided cost," [22] that is, the cost the utility would otherwise pay to generate or purchase power. Exactly how a state commission would define avoided cost and the precise formula for computing avoided cost became a huge bone of contention. Competing economic and production simulation models were developed by opposing sides, and litigation over pricing and payments consumed hours, if not years, of regulatory time, not to mention resulting lawsuits to resolve disputes over contract and delivery terms (Kahn 1988).

Another important feature of the federal guidelines was the definition of what would count as a qualifying renewable resource. The definition over what counted was also left to the states. As a consequence, conflicts arose between producers, on one side, and the utilities, the purchasing agents, on the other side. As noted in Chapter 2, a utility makes its money, and hence profit for its shareholders and investors, from investments in infrastructure, including power plants, which often comprise a large proportion of overall utility investment. Shrinking rate base equates to less profit, and equally important, less control over the means of energy production. The dominance of the monopoly utility was now being challenged by an upstart industry, emboldened by the bureaucratic powers of the state.

"Consumer protection" became the watchword that drove utilities' behavior. It was the ideological banner that utilities would wave to ward off the challenges posed

[22] "Avoided cost" is the marginal cost for a utility to produce one more unit of power. Because QFs reduce the utility's need to produce this additional power themselves, the price utilities pay for QF power has been set to the avoided, or marginal, cost.

by the incipient QF challengers. Because state commissions ultimately held the power to determine whether the utilities' purchases were prudent and in the best economic interest of their customers, utilities feared that their energy purchases might be judged imprudent, and, therefore, disallowed and not recoverable in rates, thus causing a loss on the books. Power purchases are not a utility profit center; they are a "pass through" cost of providing service. At best, a utility could only break even from its power purchases. In addition, "the investor-owned utilities complained that PURPA regulations forced them to purchase power even when the need for capacity did not exist. The long-term obligations imposed by such purchases tended to adversely affect the credit ratings of some of the investor-owned utilities" (U. S. Energy Information Administration, 1994). The utilities, naturally, had their own monopoly interests to protect. Their tactics were designed to thwart the incursion of the upstart independent energy producer industry. Protecting consumers was the shibboleth used by utilities to protect their eroding monopoly position.

The competition for generation fostered by PURPA would go only so far to alter the dominance of the natural monopoly utility. Two additional issues had to be addressed to further the goal of market competition: access to the transmission system and divestiture of utility-owned generation. While PURPA obligated utilities to purchase power from independent producers, the utilities, however, still owned and controlled most of the nation's transmission lines. To stifle competition, a utility could theoretically deny a competitor access to its transmission system, making it impossible for the electricity produced to get to market. Thus, to create a truly

competitive electricity market, federal law had to deal with the problem of utility control of and access to the high voltage transmission system. Similarly, the issue of monopoly control over generation had to be confronted. Thus, Congress stepped up to the plate with passage of the Energy Policy Act of 1992 and the Energy Policy Act of 2005, both signed into law by President George W. Bush.

The Energy Policy Acts of 1992 and 2005

During the late 1980s, the utility community was divided into two camps. Progressive-minded utilities, including those in California, recognized that power generation was no longer a natural monopoly. As Willrich explains, "[They] were in favor of creating an independent power industry that would provide utilities with the option of procuring additional supplies of electric power through competitive bidding from [independent power producers]" (2017:30-31). Utility companies would not have to tie up capital for long periods of time to finance power plant construction. A utility could put its money to better use, for example, by investing in its distribution business. In addition, a competitive bidding procurement process would reduce the risk of disallowances from commission prudence reviews of utility construction projects if such projects led to cost overruns. Finally, many utilities saw new opportunities to enter into the wholesale generation market themselves by creating their own IPPs under a holding company to sell power to host utilities outside of their state jurisdictions. The second camp, the "just-say-no" utilities, were companies located mainly in the South, which had much cozier relations with their state regulators than utilities in the Northeast and West. They believed that the vertically

integrated utility model worked just fine, as it had for decades, and, thus, saw no compelling need to disrupt the status quo.

A major step was taken by the federal government, which amended provisions of PURPA and the Federal Power Act with the passage of the Energy Policy Act of 1992. EPAct 1992 was a response, in large part, to recommendations from the Energy Task Force (officially the National Energy Policy Development Group), which was created by President George W. Bush during his second week in office. Vice President Dick Cheney was appointed to chair the Task Force.[23] The purpose of the Task Force was to "develop a national energy policy designed to help the private sector, and, as necessary and appropriate, State and local governments, promote dependable, affordable, and environmentally sound production and distribution of energy for the future" (National Energy Policy Development Group, 2001:viii).

EPAct 1992 created a new class of electric wholesale generators (EWGs) exempt from most of the regulatory provisions that governed retail investor-owned utilities. It included provisions to allow non-utility generators of any size, lifting the "small power producer" restrictions contained in PURPA. The Act, and subsequent actions taken by FERC with Orders 888 and 889, in 1996, provided open nondiscriminatory access to the interstate transmission system to non utility wholesale generators. EPAct 1992 left the decision to the states whether to require investor-owned utilities

[23] The National Energy Policy Development Group included several members of the President's cabinet. Prior to being elected to the office of Vice President, Dick Cheney served as Chairman and CEO of Halliburton from 1995 to 2000. Halliburton is a multinational corporation engaged in oil production and refining, chemicals, pipelines, and energy services.

to divest their generation assets. States that chose to restructure their energy markets were required to join FERC-regulated regional wholesale power market and transmission organizations. California made this choice. These two principles -- divestiture and creation of a power market, on one hand, and creation of regional transmission organizations, on the other -- were necessary to enable competition in the generation of wholesale electricity, and played a pivotal role in California's decision to reshape the industry.

EPAct 1992 was hailed as a victory for the forces of competition. While advancing competition and unleashing market forces, some free market advocates criticized EPAct 1992 for not going far enough. For example, it did not include provisions for drilling in the Arctic National Wildlife Refuge (ANWR) to exploit oil reserves. At the opposite end of the political spectrum, others believed that EPAct 1992 did not go far enough to encourage energy conservation. Nevertheless, the big winner was the independent energy producing community. Further reforms were necessary, however, to realize the promise of lower prices and innovation from greater competition in generation. Thus, on August 8, 2005, the Energy Policy Act of 2005 passed both houses of Congress and was signed into law.

Most prominently, EPAct 2005 repealed the 1935 Public Utility Holding Company Act and lifted restrictions that prevented a utility holding company from operating outside of its single-state jurisdiction. The repeal of PURPA created a huge boost to the independent power producing industry. Free market advocates argued that PURPA was outdated and blamed its restrictions for thwarting competition and

stifling innovation. EPAct 2005 left intact the FERC's regulatory authority to examine the financial books and records of utility holding companies, and it gave state commissions shared oversight, including decisions over mergers and acquisitions.

These amendments opened the door for utilities to form holding companies, and it led to a rash of mergers, acquisitions, and further consolidation of the industry, with mixed results. Many utilities used their holding companies to venture into new businesses. Some created generation development companies, in essence utility holding company-owned IPPs, enabling them to operate outside the jurisdiction of their utility subsidiaries to compete in the generation business. Others created businesses to compete with the monopoly utility at the retail level as direct access providers. Still others ventured into business far afield from their core utility business, some with grave consequences.[24]

Closing

The impact of PURPA, bolstered by EPAct 1992 and EPAct 2005, the addition of FERC rules to ensure open access to interstate transmission, the establishment of regional markets and transmission organizations, and the repeal of PUCHA, cannot be overstated, as these measures set in motion forces that fundamentally challenged

[24] Pacific Enterprises, the parent company of Southern California Gas Company, owned and sold the Big 5 sporting good stores and Thrifty Drugs, which was once the oldest and largest drugstore chain on the West Coast, after losing money in both. In 1998, Los Angeles-based Pacific Enterprises and Enova Corporation, the parent of SDG&E, merged to create Sempra Energy.

the dominant position of the monopoly utility and shook the foundation of the regulatory compact. PURPA fostered the new independent power producing industry and introduced competition in the generation sector, steps which threatened the dominance of the vertically integrated monopoly utility. It emboldened consumer groups, led by big business, and other special interests desirous of "choice" to challenge the actions of the utilities and to guarantee their place at the bargaining table. It gave state regulators the impetus to redesign markets and invite competition and customer choice. Taken together, these steps had the effect of eroding fundamental tenets of the regulatory compact. These measures also permanently changed the character of regulatory commissions, altering their traditional role as arbiters, judges, referees, and enforcers of rules to active interventionists and advocates advancing causes in the form of new policies in the public interest as they defined it. The next chapter focuses on the California regulatory arena, where vested structural interests converged, and where conflict and struggles played out in response to the policies and industry reforms introduced by the regulators in Washington, D. C.

CHAPTER FOUR

RESTRUCTURING CALIFORNIA'S ELECTRICITY INDUSTRY: IDEOLOGICAL AND INTEREST GROUP POLITICS

This chapter investigates the political processes that led to market and regulatory reform in the energy sector in California and explains how vested structural interests engaged in the regulatory process to advance their own concerns in the name of "good public policy." The main focus is on the regulatory arena because it offers a rich contextual environment to illustrate how interest group conflict occurs and how structural interests compete to pursue, protect, or advance their own particular economic, political, or ideological interests while attempting to frustrate the pursuit of competing interests. The chapter analyzes the market and regulatory reforms introduced in California as outcomes of ideological and interest group conflict as it played out in the regulatory arena.

Structural Interests and the Politics of Reform

As explained in Chapter 1, the analytical approach adopted here is based on the theoretical framework developed by Robert Alford (1975) in his award winning monograph, *Health Care Politics: Ideological and Interest Group Barriers to Reform*. Alford begins his study by describing the perspectives of two types of reform efforts that dominated the health care debate: "market reform" and "bureaucratic reform." As previously noted, market reformers called for changes in the health care system by introducing or increasing market forces. Bureaucratic

reformers called for increased administrative regulation and control by government (Alford, 1975:14). Nevertheless, in order to understand the successes and failures of reform efforts, Alford introduces a third point of view, which he labels the "*structural interest perspective*." As he explains, powerful interests benefit from their position in the health care system. These interests use their powers of position to advance or block reform efforts. Alford goes a step further to classify structural interests as *dominant*, *challenging*, and *repressed*.

> "Dominant structural interests are those served by the structure of social, economic, and political institutions as they exist at any given time....Challenging structural interests are those being created by the changing structure of society. Repressed structural interests are the opposite of dominant (although not necessarily always in conflict with them); the nature of institutions guarantees that they will not be served unless extraordinary political energies are mobilized" (Alford, 1975:14).

Dominant structural interests, the "professional monopoly," are represented institutionally by the medical profession, principally by doctors and their organized interest group, the American Medical Association. As Alford explains,

> "Because these interests are at present the dominant ones, with their powers and resources safely embedded in law, custom, professional legitimacy, and the practices of many public and private organizations, they do not need to be as visibly active or as cohesively organized as those groups seeking change" (Alford, 1975:191).

Hospital administrators, insurance companies, and public health professionals also occupy positions within the dominant group. The interests of these subgroups, however, are not always aligned with the interests of the medical establishment, though they may not pose a direct challenge to the dominant group when policy

differences occur. Alford posits that when such conflicts occur within the dominant group they are contained within the institutional framework of the profession in order to maintain the status quo. Legitimate challenge to dominant structural interests come from "repressed interests." In the health care industry these interests are represented by various groups which Alford describes with the catchall label the "community population."

"Dominant," "challenging," and "repressed" structural interests, are essential concepts that help to explain the crucial role that crisis played in introducing fundamental change in the energy industry. Here, dominant structural interests are represented, most notably, by the monopoly investor-owned utility. The reform efforts in California provided an opportunity for competing interests to challenge the dominance of the investor-owned utilities and stake a claim within the market. As shown in the previous chapter, the enactment of legislation and federal energy policy led to the emergence of the independent energy producing sector. The existence of IPPs posed a major threat to the dominance of the utility over the production and supply of energy. Furthermore, as the reform effort evolved, new market entrants emerged to challenge the utilities' exclusive relationship with the customer. Direct access providers and, recently, community choice aggregators, have chipped away at the utilities' dominance and market share. Together, they have taken nearly one-third of the customers away from California's incumbent utilities and now "own" the customer relationship. Private energy service companies (ESCOs) have made headway on the demand-side. Once the exclusive realm of the monopoly utility,

energy savings programs are now offered directly to utility customers by energy service companies, which now compete with the franchise monopoly utility. Conflict and struggle between the dominant monopoly interest and the challengers is essentially economic and political competition for control over market share and economic gain.

The struggle for reform has also enabled consumer groups, organized labor, environmental organizations, and other nongovernmental organizations (NGOs), "repressed or disadvantaged structural interests," using Alford's typology, to play a significant role in shaping the outcomes of reform. The term "insurgent interests" may also be an apt descriptor for this group, especially when mobilized to act.

As Alford uses the term, "structural interests" operate *within* the existing system. They are part and parcel of the institutional framework itself, essential pieces that make up the institutional policy system as a whole, and their motivation is to maintain the status quo by their very position in the system. Nevertheless, interests *outside* of the system appear on the political scene and push to "get inside" to affect change when they perceive that their interests are threatened and mobilize themselves to act. Insurgent interests come from outside the system and enter the fray when the opportunity arises to challenge the status quo. Insurgent interests, as outsiders, have no permanent standing within the system and are often not considered "stakeholders" by the powers that be or by other institutional stakeholders, the "insiders."

Alford's "structural interest" construct is a useful devise for classifying groups in the political world. His conceptualization helps to identify the dynamics of institutional interest group conflict and to explain the underlying causal factors that lead to or impede change. However, all classification schemes have their limitations. "Structural interests" should not be interpreted as a rigid and fixed classification scheme. The boundaries separating interests are often blurry. Placing a particular group permanently as a representative of a single interest may not capture the temporal or contextual nature of group dynamics and political struggle. An organization's status within the system and identification with one interest or another may change over time. Alford, himself, for example, recognized that challenging interests sometimes emerge out of the dominant group. However, one needs to take this idea a step further. Group membership and status is fluid as alliances form and shift as the political landscape changes. The politics of policy development must be understood as a dynamic political process.

For example, small consumers, as a group, are comprised of a large, diverse, and amorphous collection of individuals and businesses with little or no obvious interests in common. Yet, they share a similar position within the political and economic institutional structure as captive customers of the dominant monopoly utility. Only through organization and collective action can their interests become a legitimate force to challenge the dominance of the monopoly utility. This also holds true for trade unions and nongovernmental organizations. The community choice aggregation

movement, itself, grew out of struggle as a breakaway movement desirous of local control. It now poses a serious threat to the dominant utility interests.

Another useful example is observed in the environmental community. There are several environmental organizations that participate in the regulatory and political arenas when they perceive that their interests or the causes that they purport to represent are threatened. Some of these organizations, such as the National Resource Defense Council (NRDC), participate in the regulatory process on a regular basis and have institutional "standing." The NRDC, well endowed from corporate and foundation funding, emerged as an insurgent interest to challenge the utility and to influence the state to increase its commitment to energy conservation. Because the NRDC was able to achieve victories by engaging in the legislative and regulatory arenas, it enhanced its standing within the California regulatory system, and is now considered a "standing member" with vested interests inside the system. The Environmental Defense Fund (EDF) and the Sierra Club, grass roots organizations, offer examples of insurgent interests that occupy the role of outsider. They typically do not participate in the regulatory process on a regular basis and thus have no permanent standing. They are considered to be interlopers by the vested interests inside the system. However, because the Sierra Club has a large membership base and a national presence, policymakers have to give the appearance of listening to their concerns, but often simply pay them lip service. The Sierra Club does not carry much clout and is usually less effective than the NRDC when energy or environmental policy and legislation are debated. Similarly, organized labor, though

ever present, normally lies outside the system and only engages in the regulatory political process when it perceives its interests are threatened by particular policy initiatives or by legislation. At times, organized labor is effective and its influence can be felt, especially when union jobs are at stake. Several examples of how various interests converge in the regulatory arena and how policy outcomes are produced through conflict and struggle among the various structural interests are presented later in this chapter. [25]

The Yellow Book

In 1992, the California Public Utilities Commission initiated a study of the electricity services industry.[26] Staff in the Commission's Division of Strategic Planning supplemented their own analysis of the industry by conducting informal interviews with representatives from all segments of the industry -- utilities (the dominant interest), independent energy producers (the main challenging interest), consumer advocates (disadvantaged interests), policy leaders, and leading academics. The work of the staff culminated months later in a published a paper, *California's Electric Services Industry: Perspectives on the Past, Strategies for the Future,* commonly referred to at the "Yellow Book" (California Public Utilities Commission, 1993). The purpose of the study was to begin a "dialogue" within the industry to "examine a range of regulatory strategies designed to better align the state's

[25] David Roe's *Dynamos and Virgins* (1984) offers an engaging personal, anecdotal account of an insurgent's advocacy in opposition to Pacific Gas & Electric Company's power supply plans in a regulatory proceeding.

[26] California Public Utilities Commission. Decision 92-09-088. April 1992.

regulatory program with California's dynamic and increasingly competitive electric services industry" (Yellow Book,1993:1). The Commission's study reached two major conclusions:

> "First, California's current regulatory framework, significant portions of which were developed under circumstances which no longer persist, is ill suited to govern today's electric services industry; (Yellow Book, 1993:1) and
>
> Second, the state's current regulatory approach is incompatible with the industry structure likely to emerge in the ensuing decades" (Yellow Book, 1993: 2).

The Yellow Book did indeed accomplish its objective of opening a dialogue, but it did much more. Over the next two years the industry was preoccupied with further analysis, argumentation, and debate. The Yellow Book, in fact, ignited a chain of events that rocked California's electricity services industry. To understand what ensued, it is useful to begin by delving a bit more deeply into the analysis and reforms recommended in the Yellow Book and follow the journey that California embarked upon to reform the industry and its regulatory structure.

The Regulatory Compact Revisited

The Yellow Book challenged the notion of the regulatory compact, raising the question of whether some of its fundamental tenets had become outmoded. The commission would not retreat from its duty to regulate prices, but offered to explore changing the way prices were determined, shifting from "cost-of-service" (COS) to "performance-based" pricing (PBR). Nor would the commission temper its resolve to ensure that sufficient capital investment in utility infrastructure was made to serve the

public. However, the question of who would be responsible for making those investments was up for grabs. Growing competition in the generation sector, stemming from PURPA and California's whole hearted adoption of favorable avoided cost pricing and contract terms for QFs, opened the debate about the future role of the utility to invest in generation. Competition also forced the commission to scrutinize the utilities' investments in those parts of the market -- transmission, distribution, and customer services -- that, at least for the moment, remained under monopoly control and tightly regulated by the commission.

The commission did, however, find numerous areas where it could tinker with certain features of the regulatory compact as it had evolved in California. It focused on pruning some of the burdensome regulatory overgrowth (bureaucratic reforms) and on designing market-based incentives to promote greater efficiency (market reforms). Many of the initiatives recommended by the commission may be classified, in Alford's terms, as either bureaucratic reforms or market reforms, or as a combination of the two, as discussed below.

Bureaucratic and Market Reform Strategies

Over the many decades of regulating the utility industry, special regulatory accounting practices had proliferated creating a virtual cottage industry for accountants, economists, and regulatory analysts. One such peculiar accounting practice is what is known in utility parlance as a *balancing account*. A balancing account is a line item on the utility's books established to allow the company to record

for future recover in rates certain spending amounts authorized by the commission. As a formal accounting mechanism, a balancing account is designed to ensure that the revenue collected by the utility is neither more nor less than the amount authorized. Such assurance provides dual protections: it guarantees that the utility will be made whole for monies spent, and it guarantees that consumers are protected from unjust or unreasonable rates. Balancing accounts are but one example of the kinds of regulatory mechanisms put in place to insulate the utility from earnings volatility and financial uncertainty and to instill market confidence in the utility's financial health. The commission, under the influence of the dominant utilities, created a whole slew of regulatory mechanisms with creative acronyms such as ECAC and ERAM,[27] and a myriad of regulatory proceedings to guarantee revenue certainty and to foster order, stability, and predictability in the market, and ultimately to control the regulatory process.

Controlling the regulatory process is also a way for the regulator to safeguard its position in the system and to maintain its bureaucratic dominance over the utility and

[27] ERAM, the Electric Revenue Adjustment Mechanism, is a regulatory accounting devise that allows for the "decoupling" of utility electricity sales from revenues. Accordingly, the amount of revenue the utility is allowed to recover in rates is independent of the amount of electricity the utility sells. This dependence was once considered a "mainstay" of traditional cost-of-service or rate-of-return regulation. The subject of decoupling will be taken up later to serve as an example of the political struggles among interest groups over the control of energy service delivery and for the regulatory treatment for energy efficiency programs. ECAC, the Energy Cost Adjustment Clause, another rate adjustment mechanism, allows a utility to recover its fuel expenses in customer rates. The utility does not earn on monies spent to purchase fuel for its generation facilities. It is treated as an expense that is merely "passed through" in customer rates.

other special interests. Protecting the utilities from financial uncertainty, however, had the unintended consequence of discouraging risk taking and efficient operations. The Yellow Book concluded that practices "blunt(s) incentives for efficient utility operation" (Yellow Book, 1993:3). Removing some of the protections guaranteed by balancing account treatment and other regulatory mechanisms was one significant bureaucratic reform recommended to the commission.

Bureaucracies tend to be self perpetuating and grow by means of their own internal logic. Public utility commissions are no exception. The California Public Utilities Commission is one of the state's largest bureaucratic agencies. It has over 1,200 employees engaged in economic regulation affecting virtually every aspect and quality of life, from the water we drink, to the means by which we heat our homes and cook our food, to how we communicate by telephone, to how we transport ourselves and the goods we consume. The commission is an administrative body that speaks through formal decisions rendered through a quasi judicial process. The quantity and complexity of proceedings has grown exponentially over the decades, reflecting both the complexity of the technical issues the commission has to address, as well as a result of the bureaucracy creating its own work load. Moreover, the vast array of its proceedings are often fragmented and inconsistent, cover overlapping topics, spawn multiple spinoff proceedings, and cause unnecessary delays in decisions, commonly referred to as "regulatory lag." Adding insult to injury, there is an economic cost to delay and to excessive regulation, and such costs are ultimately borne by the consumer in utility rates. The commission concluded that "the current

regulatory approach requires many complex proceedings, which increase administrative costs and threaten the quality of public participation and Commission decisions" (Yellow Book, 1993:4). Streamlining administrative procedures and placing strict time limits on the decision-making process are further examples of the bureaucratic reforms recommended by staff to the commission.

Chapter 3 explained how the Public Utility Regulatory Policy Act fundamentally changed the regulatory landscape and shook the foundation of the regulatory compact by encouraging and fostering competition for generation services. The Yellow Book concluded that "the current regulatory approach offers utility management limited incentives and flexibility to respond to competitive pressures" (Yellow Book, 1993:4). Changes to the regulatory structure, i.e. bureaucratic reform, would be needed to deliver the resulting benefits from competition to consumers.

While PURPA did not remove the utilities' obligation to serve, it did shift the financial risk/reward equation traditionally borne by the utility and its customers. Traditionally, under the regulatory compact, a utility was virtually guaranteed a return of and a return on its capital investment, so long as the regulator deemed the utility's investment to be prudent. That convention was the norm for decades. The problem with this system was that it provided little financial incentive for the utility to operate efficiently or to seek ways to reduce costs. The commission began seeking opportunities to lower costs in the electricity sector in the same way that low cost airlines managed to reduce the cost of air travel for airline passengers. As one former

president of the commission put it, he was looking in the energy sector for the next Southwest Airlines, nipping at the heels of the dominant carriers, like United and American Airlines.

Whereas the utilities, by and large, could still count on their commissions to allow pass-through of costs, independent power producers, in contrast, were not given the same guarantees afforded to utilities. They had no captive customers to pass along their costs. The prices paid for their output was an administratively determined "avoided cost." Construction and operating cost overruns would be borne by investors, not by captive customers. If incentives were properly aligned and independents were able to build and operate their plants more cheaply and efficiently than the monopoly utilities, then consumers would benefit. The commission concluded that "the current regulatory approach conflicts with the Commission's policy of encouraging competition in the electric services industry" (Yellow Book, 1993:4). Regulatory reform would require bureaucratic reform following the market reforms established by PURPA.

Strategies for Regulatory Reform

The Yellow Book pointed out shortcomings in the current regulatory regime by noting that the bureaucratic structure was out of step with the evolving competitive market, following PURPA guidelines as implemented by the commission itself. This recognition led the commission to explore remedies (Yellow Book, 1993:4). The first such strategy -- *limited reform* -- was a mixture of maintaining some features of the

current regulatory system, for example cost-of-service ratemaking, while introducing modest changes to administrative operations and eliminating balancing accounts to streamline the bureaucracy. Implementing this strategy would not fundamentally change the regulatory status quo or undermine tenets of the regulatory compact. Dominant interests, most notably the utilities, would not be threatened, and the utility commission itself would still hold sway over the regulated entities.

A second strategy to be explored -- *a price cap* -- deviated from the long-standing practice of tightly controlling prices based on cost of service. It featured a more relaxed approach to price regulation. In 1996, Congress passed the Telecommunications Act, which overhauled the telecommunications industry by introducing competition in the market for virtually all telecommunications services. The Federal Communications Commission (FCC) left implementation of the Telecommunications Act to state commissions, analogous to the Federal Energy Regulatory Commission's role in regulating the energy industry and its decision to allow the states to decide how best to implement provisions of PURPA. The California commission adopted what it termed the "New Regulatory Framework" [28] to govern California's telecommunications industry.

A key feature of the New Regulatory Framework was the adoption of a "Price Cap Model," which permitted telecommunications carriers a great deal of flexibility in

[28] The CPUC initiated formal proceedings to implement provisions of the federal Communications Act of 1996, relying on several pieces of legislation passed by the California Legislature, notably Assembly Bills 2768, 441, and 2958, which were aimed at streamlining the regulation of telecommunications services.

pricing their services. If adopted for energy, a price cap model would undo one of the basic precepts of the regulatory compact by severing the relationship between utility rates and expenses. The question then arose as to whether such a dramatic step would violate the "just and reasonable" principle enshrined in federal and state law. Would utilities welcome greater flexibility to price their services if it meant jeopardizing their inherent right to collect reasonably incurred expenses made on behalf of their customers? Would their dominant position be threatened or enhanced? And what about the disadvantaged and less powerful consumers who rely on the commission and regulation to protect them from price gouging and predatory practices by unscrupulous business enterprises? Whose interests would ultimately be protected and who would be harmed by market reforms? These were daunting questions with no obvious answers. Their resolution would be borne out through political struggle in the regulatory process.

A third strategy to be explored -- *limited customer choice* -- was another bureaucratic nod to the market. Telecommunications was not the only industry under the commission's purview that had undergone some form of deregulation. The natural gas industry, with the passage of the National Gas Policy Act of 1978, followed a pattern similar to PURPA and the electricity sector. Changes to the regulation of natural gas were influenced by the experience in telecommunications. The federal government revised its regulations to allow market forces to set natural gas prices. The California commission adopted changes to the market structure to promote customer choice, similar to the options made available to

telecommunications customers who now had the freedom to abandon land lines in favor of mobile telephones and the ability to escape the grip of a single monopoly provider to choose their carrier, which included new market entrants.

To promote customer choice in natural gas service, the commission segmented the market into "core" and "noncore." Large industrial and commercial customers, the noncore, which challenged the interests of the dominant monopoly utility and were victorious in the fight for liberalization, were no longer tethered to the utility and were thus free to choose their natural gas supplier. Residential and small business customers with limited market power to challenge the dominance of the monopoly utility were still dependent on their utility to procure natural gas on their behalf. This situation would eventually change within a few years as the market for natural gas supply became more competitive, and core customers, too, were allowed to choose their own supplier.

In essence, the strategy to open the market and give some customers the freedom to choose meant a redefinition of the regulatory compact. It removed the utility's exclusive franchise for the noncore, but left intact the utility's duty to serve the core. Those who retained utility service still had the regulatory protections enjoyed by "bundled" utility customers.

The commission recommended exploring one additional strategy -- *a restructured utility industry*. This option represented the most radical departure from traditional utility regulation and leaned most heavily toward a free market approach. However,

implementing this game plan would mean initiating significant reforms in the regulation of the electricity industry and adopting further changes to the regulatory compact, which would ultimately challenge the dominant interests of the monopoly utility at its core. According to this scheme, the monopoly utility would no longer enjoy a retail franchise nor the duty to serve those customers who elected to procure their electricity from an independent provider. As we shall see, interest groups were poised to challenge the dominance of the monopoly utility. Independent energy producers, direct access providers, large consumers, and, more recently, community choice aggregators, welcomed such reforms with open arms and were eager to take advantage of liberalization. Others, less powerfully situated and whose interests were often disadvantaged by the system, notably residential and other small consumers, as well as their guardians, were either opposed to restructuring for fear that their regulatory protections would be compromised, or cautiously optimistic about reform if it meant erosion of the utility's monopoly power. Labor unions, environmental organizations, and other outside interests, sat in watch, figuring out where their interests would lie and who would be good partners in alliance to challenge the dominant monopoly utility interests.

The most radical feature of the restructuring strategy was the proposal to force the utilities to divest their generation assets -- their means of production -- and a significant source of their revenue and profits, and to open the market to competition. This move would boost the fledgling independent power producing industry by replacing the utility's monopoly over supply with a competitive market for generation

services. A less transparent consequence of this strategy was to permanently alter the traditional vertically integrated utility. With no generation assets the utility would become a "common carrier," transmitting power over its transmission lines, subject to FERC's open access rules. The new stripped down utility would become a transmission and distribution "wires" company with its retail customer base more or less secure, at least for the time being. Electricity generation would become a commodity business, and procurement of generation services, i.e. the commodity electricity, would remain a utility service for those who chose to remain full service "bundled" utility customers. Others, namely large industrial and commercial customers, initially, were free to choose their commodity supplier from an independent source. For the time being, the utility's control of the retail market and its customer base was secure, but that, too, would ultimately change. "Customer choice" and "direct access" for all consumers were soon added to the mix of market reforms.

Economic and Ideological Motivations

The bureaucratic and market reform initiatives proposed in the Yellow Book struck at the heart of the debate over the future of the electricity services industry, and California was viewed as a beacon lighting the way for restructuring initiatives across the nation. As previously observed, legislative and policy directives were responsible for instigating reform. But what about other underlying motivations? There were three intertwined motivations, two economic and one ideological.

First, there was the issue of *high costs*. California regulators wholeheartedly embraced the independent energy producing industry. Consistent with their favoritism toward the emergent QFs, the commission's avoided cost formula and calculations resulted in high-priced standard offer contracts for renewable and cogeneration supply. The commission assumed that by fostering a competitive wholesale market, competition would ultimately drive down consumer costs. Sweeney (2002) provides a useful illustration to underscore the assumption made by the commission that its avoided cost calculation methodology and standard offer contracts awarded to QFs, while lucrative initially to encourage the further development of renewable energy sources, would lead to lower prices in the long run. As Sweeney explains,

> "Under Interim Standard offer No. 4 (ISO4), a QF based on renewable energy could sign a contract based on a fixed forecast of future electricity prices. Such a QF entering a contract would be guaranteed $57/MWh in 1985, $81/MWh in 1990, and $109/MWh in 1994. After ten years the contract price reverted to the short-run avoided cost, which typically would be far lower than the fixed-price guarantee. Gas-fired cogeneration units were not treated nearly as generously but were generally paid an annual average of about $25/MWh for capacity and about $25-$30/MWH for energy" (Sweeney, 2002:17).

Being obligated to purchase high-cost power did not sit well with the utilities.

> "The investor-owned utilities complained that PURPA regulations forced them to purchase power even when the need for capacity did not exist. The long-term obligations imposed by such purchases tended to adversely affect the credit ratings of some of the investor owned utilities" (U.S. Energy Information Administration, 1994).

Although true, the utilities were reeling from the imposition of the government's control over their purchasing decisions. Their objections were motivated by a real threat to their dominance and the diminution of their market share of generation. The investor-owned utilities were accustomed to their traditional role as vertically integrated monopolies, and as builders and operators of large-scale central generating power stations. These opportunities were quickly fading away.

In addition, California was suffering from the overhang of the previous decade's huge capital investments made by the utilities in nuclear power plants and other large-scale generating assets. Southern California Edison and San Diego Gas & Electric Company invested in the San Onofre Nuclear Generating Station. SONGS Unit 1 went into commercial operation in 1968, Unit 2 in 1983, and Unit 3 in 1984. Pacific Gas & Electric Company invested in the Diablo Canyon Nuclear Power Plant. Unit 1 became commercially operational in 1985 and Unit 2 in 1986. PG&E also built the Helms Pumped Storage Project, which went into operation in1984. The utilities' economic woes were further exacerbated by the high cost of capital used to finance these plant investments during the high inflationary period of the late 1970s and early 1980s, compounded by the fact that the utilities sought cost recovery while the country faced a major recession.[29]

High utility costs translated directly into *high customer rates*, a second factor motivating reform. "In 1991, the average electricity rates for California's investor-

[29] U.S. Congressional Budget Office, 1982.

owned utilities ranged from 9-10.5 cents per kilowatt-hour, which was thirty to fifty percent above the national average" (Blumstein, Friedman, and Green, 2002:6). Although California rates were high, customers' bills were lower than the national average for two reasons: California's temperate climate, and the success resulting from massive investment in customer energy efficiency and demand-side management programs.[30] This meant that although rates were high, bills were comparatively low because Californians consumed less energy per capita when compared nationwide. Despite the discrepancy between high rates and low bills, California consumers, large and small, could not look past the matter of their high rates. Businesses competing in the global market were sensitive to high production costs, particularly for those industries where electricity was a major input. "With the economy in recession, and the state looking for opportunities to bolster its competitive climate and attract new industry and jobs, it seemed eminently sensible to at least consider the idea of electricity restructuring at this time" (Blumstein, Friedman, and Green, 2002:6).

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[30] A 2015 analysis performed by the California Public Utilities Commission found that "California's average residential electricity use is among the lowest in the nation. In fact, Californians use about 33% less electricity at home than do customers in the rest of the country. Overall, electricity consumption in the state has remained relatively constant for the last four decades, and forecasts show this trend will continue at least in the near future." (California Public Utilities Commission Policy & Planning Division, 2015:9.) Also, a report conducted by the CEC, noted that "Although in nominal terms, most electricity prices and bills have increased over the years; an important finding of this analysis is that, in constant 2005 dollars, average electricity bills for some utilities are lower today than they were more than 20 year ago" (Gorin and Pisor, 2007:6).

A third factor motivating reform was ideological: the mantra of *customer choice*. As noted above, the deregulation movement was sweeping across the liberal democracies. In the U. K., Margaret Thatcher led the way by deregulating financial, telecommunications, and electricity markets. In the U. S., the Reagan administration's foray into deregulation touched many sectors of the economy. The air lines, trucking, telecommunications, and natural gas industries appeared to be benefiting from less reliance on traditional regulation in favor of the free market (Kahn1988 and 1990). California was no exception; it, too, got swept up in the deregulation frenzy, and the U. K.'s experience with electricity deregulation, as illustrated in the next chapter, became a touchstone for California's experiment with market transformation.

Rates and the Consumer Revolt

The "crisis" caused by high costs and high rates became a rallying cry for energy users and their organized interests to challenge the dominance of the monopoly utilities. As Alford notes, "crises," or even the mere perception of a crisis, may "serve as political weapons in the hands of interest groups, inside and outside of government, which divert resources and services from one program to another, one social group or class to another" (Alford, 1975:xii). As Edelman (1976) so convincingly illustrated, a crisis may be real or symbolic in nature. Regardless, a crisis is an anomalous situation, a disruption, that poses a major threat to the status quo.

Organized business groups seized the opportunity to use the "crisis" caused by high rates to petition the commission for rate relief. They took their cause, metaphorically speaking, to the streets, or, more precisely, to the steps of the commission and to the halls of the legislature in the state capitol. They argued that rate relief was essential for them to remain competitive in the global marketplace. The commission needed to stem the tide of rising public criticism, and thus could not turn a deaf ear to sympathetic legislators and organized consumer interests.

This was not the first time that consumers rebelled against a rate increase. Protests by consumer groups have become *de rigueur*. A decade earlier, PG&E proposed a $2 billion rate increase, which caused widespread customer protest. At a public hearing in the Sierra Nevada foothill town of Placerville, California, the PG&E representatives, who had come to explain the need for rate relief, had to be escorted out of town by the California Highway Patrol to escape an unruly crowd of disgruntled citizens. That episode, however, did not develop into an organized consumer movement, but it did foreshadow events to come when business, backed by large corporate interests, organize effectively to petition the government.

Large consumer interests were represented by several well funded organizations and trade associations. The California Manufacturers Association (CMA) and the California Large Energy Consumers Association (CLECA) led the charge. CMA's membership included practically every medium- to large-sized business concern in the state. Now, joined by the growing and increasingly influential tech industry, CMA expanded its rolls and thus became the California Manufacturers and

Technology Association (CMTA). CLECA's membership of large industrial electricity users included cement manufacturers, steel producers, air products producers, and other heavy industries. Both CMTA and CLECA made a habit of intervening in utility rate cases where battles over utility revenues and rates were routinely fought. Their regulatory battle strategy was singularly focused: to shift costs away from industry to small commercial, agricultural, and residential consumers. However, in this climate, the monopoly utility, rather the other customer classes was the immediate target of attention.

Joining the coalition was an array of other well organized large corporations and their trade associations, such as the Western States Petroleum Association (WSPA), which represented the majority of petroleum producing, refining, and marketing companies in the Western United States, and other larger-scale energy producers, users, and marketers represented by two separate groups, the Energy Producers and Users Coalition (EPUC) and the Indicated Producers. Membership in these later two groups included most of the multinational energy companies, such as BP, Chevron, Shell, ExxonMobil, ConocoPhillips, and Occidental Petroleum. Agribusiness, represented by the California Farm Bureau Federation, also joined the coalition of energy users to challenge the utilities' rates and to mark their preferences for reform. Also opposing the utilities were the beneficiaries of PURPA, the independent energy producers, and their trade associations: the Independent Energy Producers Association (IEPA), the California Cogeneration Council (CCC), and the Cogeneration Association of California (CAC). Unlike the organized consumer

groups, these organizations and their members were not as much concerned with rate reform. Their agenda was aimed toward market and regulatory reform: weakening the utilities' market power over the generation and supply of energy and substituting the utilities with themselves as the major suppliers of power.

Residential and small business energy users, which make up the vast majority of the utilities' customer base, were not without their advocates, too. California's two major nonprofit consumer-based advocacy organizations -- The Utility Reform Network (TURN), which operates statewide, and the Utility Consumer Action Network (UCAN), which operates in the San Diego area -- joined with business, commercial, and industrial customer interests to advocate for lower rates on behalf of their constituents, both as an offensive attack on the utilities and to defend themselves against the large and powerful business interests whose strategy was to shift their costs onto the residential and small business classes. In this instance, politics did make for strange bedfellows.

But beyond the common fight for lower rates, the interests of the small and large consumer groups diverged. Large consumers, represented by the business class, advocated for fundamental transformation of the energy delivery system. For them, the fight for lower rates was tactical, a means to an end. They wanted the ability to exercise choice in their supply. As one can clearly see from the list of companies in this camp, many were energy producers and suppliers themselves, poised to benefit

financially from liberalization of the market and to gain market share at the expense of the dominant utilities.

The Blue Book

The "dialogue" that the Yellow Book opened continued for a year, during which time the commission took comments on its reform proposals from all segments of the industry. The next significant step taken by the California commission was to open an investigation to explore policy changes to the rules governing the electricity services industry. On April 20, 1994, the commission initiated a formal proceeding with the publication of a document, *Order Instituting Rulemaking on the Commission's Proposed Policies Governing Restructuring California's Electric Service Industry and Reforming Regulation,* known as the "Blue Book" because of the color of its cover sheet (California Public Utilities Commission,1994; Blumstein and Bushnell 1994). This move launched another lengthy public process that lasted over a year-and-a-half, during which time the commission held formal hearings, received filings from interested parties, and engaged in debate over how the electricity services industry would be restructured and what regulatory reforms would be adopted.

The Blue Book endorsed fundamental changes to the market. It took the Yellow Book's most radical approach and proposed that the commission adopt rules to deregulate the generation component and establish rules to allow customer choice. Electricity generation would essentially be deregulated and subject to the discipline of a competitive wholesale market. At the retail level, the vision laid out was to allow

customers to choose between the traditional approach of receiving full service "bundled" energy delivery from the utility, or "direct access," in which customers could select their energy supplier in a competitive marketplace. The CPUC would relax its traditional regulatory oversight and rely on the discipline of the market for price control. It would replace its traditional cost-of-service ratemaking with a performance-based approach.

The commission decided to phase-in direct access by opening the market, first for large commercial and industrial consumers, and later for small business and residential customers. The commission wanted to create an orderly process and cause the least amount of disruption in the marketplace. An orderly phased-in approach, furthermore, would enable consumers to gain comfort with the new system through a massive educational campaign. The utilities also needed time to adjust. Systems had to be designed and built to accommodate new complicated rules for customers who chose to switch suppliers and to accommodate utility accounting and billing practices. Direct access introduced a radical change in the utility-customer relationship that had endured for the better part of a century. New market enterprises, such as Enron, were eager to gain access to the utilities' customer base. They saw opportunities to exploit the market by offering utility services that were heretofore the exclusive realm of the monopoly utility, and they sought opportunities to shove aside the utilities by offering consumers with new unregulated products and services. The earlier push for energy conservation and efficiency fostered an independent energy services industry. Newly emerging energy services companies (ESCOs) began to compete with the

utility to provide energy savings programs. Opening the market to competition and direct access would mean that the investor-owned utilities would surely lose market share, experience an erosion of their customer base, and lose the heretofore exclusive connection to their customers.

The utilities viewed these market reforms as the proverbial "slippery slope." Rules to "force" the utilities to divest their generation assets, historically a major source of their profits, was perceived to be an assault on the very foundation of their core business. The commission could not legally require the utilities to divest their fleet of generating assets by means of a regulatory order. The commission was, however, able to establish a set of incentives that would reward the utilities financially by allowing them to retain a disproportionate share of the gain on sale (profit) from divesting their fossil fleets. On the flip side, the commission established rules that gave the utilities a disincentive by lowering the rate of return to unacceptable levels on retained generating assets. In fact, the order only required the utilities to divest fifty percent of the generating assets, but the incentives/disincentives were sufficient to induce the utilities to sell their entire fossil generating fleets.

It is important to note that the commission's divesture order was aimed solely at the utilities' fossil generating facilities. The logic behind the decision to exclude non-fossil generating plants was based on several factors. First, California's post-World War II vintage fossil fleet was aging and needed to be repowered or replaced. Given the age of the fleet, these assets were largely depreciated on the utilities books. Thus, it was assumed that the utilities' gain on sale would be relatively low and have little

impact on customer rates. Second, the value of the fossil fleet to a potential buyer was assumed to be in the underlying value of land because of the location of the assets with favorable zoning and associated infrastructure, which made these sites suitable for a variety of new development opportunities. Third, the out-of-state generating companies, some of which were the unregulated subsidiaries of a regulated utility, that purchased the utilities' power plants sought to establish a foothold in the newly designed California market, positioning themselves to exploit new sales opportunities. Fourth, the fossil fleet was needed either for system-wide or local area reliability. Fossil generation is typically used as the "swing" resource to balance load as demand shifts over the course of the day, and, as the "marginal" resource, it sets the price that all generators get paid. Therefore, it was assumed that the system's operational requirements would put a damper on any potential to exploit these resources for economic gain. It was assumed that even if the utilities were to retain less than fifty percent of their fossil generation, such an amount would serve as a safeguard to protect against the potential for the utilities to exercise market power. The divesture decision excluded the utilities hydroelectric generation facilities because they provided a cheap source of power that the commission wished the utilities to retain for the benefit of the consumers, and because the FERC licenses governing the operation of the hydro facilities were considered too complex to unravel. Moreover, the utilities were considered responsible stewards of the hydro system. Environmentalists and the state resource agencies objected to a sale of the hydro system out of fear that a private enterprise would exploit the natural

environment for economic gain. Finally, divesture excluded the utilities nuclear facilities because it was assumed that it would be too complicated from a regulatory perspective and too risky of a proposition, given the degree of operational and safety requirements associated with owning and operating a nuclear power plant, to transfer ownership to a new operator.

Adding insult to injury, the utilities were also confronted with new rules that would allow their customers to be taken away via direct access. Taken together, these two measures -- wholesale competition in generation *and* retail competition through direct access -- were a further indication that the regulatory compact could no longer to be relied upon by the incumbent utilities as a safety net to protect their customer base and source of revenue. A new day was dawning.

The reform proposals contained in the Blue Book still needed a formal commission-sanctioned process to lend legitimacy to the new rules that it would eventually adopt. A formal process would also shield the commission from any potential legal challenges brought forth by an aggrieved party. After all, there would be winners and losers in this zero-sum regulatory game among the various structural interests. Hence, the commission's formal rulemaking proceeding ushered in the next phase of reform, which took more than another year for that process to reach conclusion.[31]

[31] See Blumstein, Friedman, and Green (2002); Borenstein & Bushnell (2000, 2015); and Jaskow (1997, 2000). Holman argues that "during the process of formulating its new policies for regulatory reform, the CPUC may have crossed the line between permissibly acting consensually and impermissibly delegating legislative policymaking authority to persons with financial stakes in the outcome" (1997:60).

Structural Interests and Coalition Formation I - "Battle Lines Being Drawn" [32]

Now, with specific reform proposals on the table battle lines could be drawn. By this time, the utilities were resigned to the fact that reform was a *fait accompli*, and others, eager to challenge the dominance of the utilities, saw the upside potential for new opportunities. The main issues to be resolved were: what form would restructuring take, how long would the transition to the new market structure take, and what new regulations were in store. These were not idle questions as there was much at stake financially for the winners and losers.

A high priority for the utilities was to recover the cost of their prior investments. As noted above, during the previous two decades the utilities had made large infrastructure investments in plant and equipment under the assumption that these facilities were necessary to provide service to their customers for the long run. Following traditional utility accounting practice, most plant and equipment is depreciated over the useful economic life of an asset, normally thirty or more years. The utilities argued that they were entitled to recover the cost of these commission-sanctioned investments and the above-market power purchase contracts that the commission authorized following PURPA guidelines, according to the long-standing

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The argument Holman makes is relevant to the stakeholder process the commission sanctioned in ordering parties' to work together to hammer out the details of its final restructuring decision, discussed below in Chapter 4.

[32] "Battle Lines Being Drawn" is a phrase taken from the lyrics to the Buffalo Springfield Song, "For What's it's Worth."

principles embedded in the regulatory compact. From the perspective of the shareholder and investor communities, the utilities' financial well being depended on the commission holding up its end of the regulatory bargain and allow the utilities to recover the full cost of their investments over a reasonable period of time. The utilities borrowing capacity and their bond ratings affected their cost of capital, which translated directly into customer rates. Financial markets do not like surprises; predictability and certainty are much preferred.

Opening the market to retail competition via direct access also meant that the utilities' customer base wound shrink naturally as customers migrated away from utility service. A shrinking customer base would mean that costs would be shifted to those captive customers who chose to remain with their host utility, spreading fixed costs over a smaller number of customers, unless safeguards were put in place to prevent an unfair burden being placed on remaining customers or on the utility's shareholders. The commission adopted a ratemaking mechanism to enable the utilities to recover their "stranded costs" through a "competitive transition charge" (CTC). The CTC was designed to prevent "leakage," the diversion of revenues to "shareholder" accounts, and to spread stranded costs over the existing customer base for an extended period of time as a means of avoiding rate shock caused by a steep and rapid rise in customer rates. Remaining customers, as well as departing customers, would be responsible for paying their fair share of the freight. This may seem odd at first blush, because normal markets do not work in this way; but nothing

about utility ratemaking makes perfect economic sense without a grasp of the theory of public utility regulation.

When the state awards a franchise to a utility, it is assumed that *all* customers who reside or do business within the utility's geographic franchise service territory would now and forever belong to the utility's franchise, so the theory goes. This, however, was before competition was made possible and customer choice a matter of public policy. In the end, the commission imposed a surcharge and embedded the competitive transition charge in customer rates. This was by no means merely a good will gesture of generosity on the part of the commission. The utilities had to fight hard for this concession. To the regulators, and acknowledged by the challenging business interests, the competitive transition charge was understood to be a regulatory bargaining chip, a quid pro quo, and a concession to allow competition. The utilities would get financial relief in the form of the competitive transition charge in exchange for agreeing to open the retail market to competition, and for accepting the mandate to sell their generation assets to incipient competitors. The less powerful disadvantaged consumer groups and NGOs saw the competitive transition charge and the bargain it represented as a nefarious design and a conspiracy between the utilities and the large consumers plus the independent generators, sanctioned by a duplicitous commission, as a financial handout to the big corporate interests at the expense of the disenfranchised and captive customers. To the commission, the competitive transition charge was a clever maneuver, a regulatory sidestep, to avoid lawsuits over an unlawful "taking" that might otherwise arise from forcing asset divestiture.

The independent power producers, eager to challenge the utilities dominance, wanted to secure their position to sell power into the competitive market and, over time, build new generating assets to garner market share. The emerging direct access providers were restlessly waiting for the green light to begin marketing their services to utility customers. Large industrial and commercial energy users were anxious to realize the benefits of lower prices promised by the competitive market and to aid their economic competiveness in an increasingly global marketplace Residential and small business consumers, who would have to wait their turn to participate in the direct access market, also wanted to realize the same cost saving benefits presented to the big consumers, but their advocates were skeptical that the market and regulatory reforms presented would be realized. The consumer groups were less interested in market reform and preferred to maintain the status quo holding to the belief that a tightly regulated utility and a strong pro consumer regulatory commission was the only sure way to protect consumers.

The dominant interests represented by the utilities were not uniformly in synch. They were united in support of reform, but their interests diverged over what form the restructured market would take. Pacific Gas & Electric Company decided to "side with customer." It spoke the language of customer choice, but not because it embraced the ideology of choice. Its reasons were pragmatic and based in the economics of regulation. As explained in Chapter 2, according to the principles of ratemaking, utilities earn a return on capital, i.e. profit, from investment in infrastructure. Other expenses are merely "pass through" costs collected in customer

rates. The cost of procuring power on behalf of its customers is not a profit center for the utility. Moreover, only those costs deemed to be "reasonable" by the regulator may be included in rates. In order to determine whether the utility acted reasonably, the commission evaluated the utility's energy purchase decisions in a post hoc "prudence" review. This essentially posed a no win proposition for the utility. At best, the utility could recover one hundred percent of its power purchase costs and break even. However, historically, the commission usually found some reason to disallow a portion of the utility's costs of procuring power. So long as the utility possessed some of its own generating facilities, it allegedly could game the system by operating its power plants to take advantage of market conditions instead of procuring power from third parties, essentially disadvantaging the independent power producers while rewarding itself. If the utility did not operate its system optimally or procure power to meet customer needs at "least cost," then ratepayers would not get the best deal. Either new rules would have to be adopted to create a wall between the utilities' purchasing department and its generating department, or the utilities would have to divest their generating facilities to prevent them from exercising market power. Having suffered economic loss in the commission's post hoc prudence reviews in most years, PG&E announced that it would exit the procurement business and allow customers to purchase power directly from the market, essentially voluntarily breaking up the operation of the vertically integrated utility. Of course, PG&E also saw an economic opportunity for itself. Like some utility companies in other states which had opened their markets to retail competition, PG&E was planning to create a

retail energy service company to compete in the power market alongside Enron and others. Thus, PG&E sided with the large industrial and commercial customer interests and joined their coalition to advocate for regulatory reform placing customer choice at the fore. In addition to PG&E and the large business interests, the other emerging interests that joined this coalition were the independent energy producers and power marketers, both of which had much to gain: the power producers would now be on equal footing with the utilities to compete for power purchase contracts on a level playing field, and power marketers would be able to play in the market and arbitrage energy prices across the Western electricity market.

Dominant structural interests are not always aligned, however. The division within the utility community pitted PG&E against its two siblings to the south. Southern California Edison and San Diego Gas & Electric were not prepared to abandon their monopoly position. They favored preserving the vertically integrated utility structure and were willing to make concessions through market design to prevent abuse and by adding measures to protect consumers, a not so subtle cooptation strategy to garner customer support.

The structurally disadvantaged interests, by and large, were skeptical of market reform. One such group was the commission's consumer advocacy staff. The CPUC's Office Ratepayer Advocates (ORA), formerly called and the Division of Ratepayer Advocates (DRA), is a staff organization housed within the commission. Its stated mission "is to obtain the lowest possible rate for service consistent with

safety, reliability, and the state's environmental goals." [33] Its director is appointed by the governor to give the organization a degree of autonomy from the direct control of the five commissioners and the commission's staff executive director. Staff members, however, are civil servants, employees of the commission itself, who report upward to management. This arrangement poses a fundamental contradiction over the degree to which staff and the organization as a whole act on behalf of the interests of the consumer, on one hand, or work to carry out the policy directives of the commission and the current gubernatorial administration, on the other hand. Its short-term goal to seek the lowest possible price for service may not necessarily be in the long-term best interests of consumers, and may or may not be in synch with the commission's or the administration's policy objectives. Moreover, not all consumer classes have the same political interests. Serving the state's policy or environmental goals does not necessarily prescribe the correct position to take in any given policy debate or regulatory proceeding. Caught betwixt and between, the ORA, by default, retreated to a position favoring the status quo, thus revealing its true ideological character and pro-consumer/anti-utility bias, which sometimes belies what is in the consumer's long-term best interests. The ORA, in the minds of many, especially the reform minded commissioners, the utilities, and the others challenging the status quo, posed a significant bureaucratic barrier to reform.

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[33] Source: CPUC website. The commission's consumer advocacy office has had three different names. The names ORA or DRA are used throughout the text depending on which name was relevant at a given point in time. I have refrained from using its most recent name, the Public Advocates Office (PAO), to avoid confusion.

The other major interest posing a barrier to reform was the state's two nonprofit consumer-based advocacy organizations: TURN and UCAN. They were skeptical about whether the interests of their ratepayer constituents would benefit from restructuring. Certainly any measure to lower rates for consumers was beneficial, but a restructured market, they feared, would weaken the commission's regulatory control over the utilities and hence expose consumers to the whims of the market unless, of course, adequate safeguards and strong consumer protection mechanisms were put in place. Organized labor, environmentalists, and other amorphous groups sided with one interest or another depending on the issue de jour. Organized labor wanted to protect jobs. Environmental organizations also had their specific, often parochial, issues. More will be said about their intervention in the process later.

Ideology and the Regulator

During this time all five members of the California commission were Republicans appointed by Governor Pete Wilson. Unlike the FERC, which cannot seat more than three members from the same political party at any given time, the California commission has no such restriction. In fact, party identification had little to do with the commissioners' support for market and regulatory reform. All five members of the commission favored liberalization of the market and were convinced, agreeing with the staff's analysis, that the traditional method of utility regulation was outmoded. They differed, however, on fundamental principles, and found themselves lining up in opposing camps with a 3-2 vote on the direction policy should take.

The President of the commission, Daniel Fessler, was a law professor, serving on the commission while on leave from the University of California, Davis, School of Law, where he was known for his expertise in contract law. Fessler, a graduate of the Georgetown University Law Center, was a member of the Federalist Society, an organization of conservative and libertarian lawyers known for favoring "originalist" interpretations of the Constitution. His legal philosophy was expressed in a book he coauthored with fellow law professor Charles Haar, *The Wrong Side of the Tracks* (1986). The book is concerned with the question of how the law can assure equal treatment to all of it citizens, especially to minorities, the poor, and other disadvantaged people. The book traces the history of common law, arguing that public services provided by municipal and state governments should be considered monopolies and guarantee nondiscriminatory treatment to all. Fessler referred to himself as a "compassionate conservative."

His closest ally on the Commission was P. Gregory Conlon, who later succeeded Fessler as commission president. Conlon, an accountant by profession, was a managing partner in the utility practice at Arthur Andersen, at that time one of the "Big Five" accounting firms. Prior to his appointment to the commission, Conlon was the outside audit partner in charge of the PG&E account. He later received his law degree from the University of San Francisco Law School, while serving on the commission. Conlon was a Republican Party loyalist who ran unsuccessfully for the office of State Treasurer after serving his term on the commission. In a heavily

dominant Democratic state, Conlon had little chance of winning an election for statewide office in California against better know Democratic candidates.

Henry Duque was the third commissioner to form a voting bloc with Fessler and Conlon. A banker by profession, Duque was the scion of a successful Los Angeles attorney who was famous for negotiating the purchase of Chavez Ravine for Walter O'Malley when the Dodgers moved from Brooklyn to Los Angeles. Duque, like Fessler, was a member of the Bohemian Club, and speculation was that Duque's appointment to the commission had much to do with his social standing and his relationship with Fessler, rather than his professional expertise. He certainly had no background in public utility regulation, but few in-coming commissioners do. Duque's focus while serving on the commission was on water utility regulation, often considered the least prestigious practice area at the commission. Duque rarely took a controversial position on any matter, preferring to get along with everyone, which meant that he could be counted on by no one for his support. He was well liked by most for his calm and friendly demeanor and especially by the water industry because they found a sympathetic ear at the commission when the major attention was given to telecommunications, natural gas, and now especially to electricity. To his credit, Duque championed the cause of the disabled and hearing impaired and sought ways to aid these disadvantaged groups through the commission's "Deaf and Disabled Telecommunications Program." Toward the end of his tenure, Duque was fined for an ethics violation by the California Fair Political Practices Commission because he had voted on matters concerning Nextel Communications while owning stock in the

company. In his legal defense, Duque contended that he was unaware of his stock ownership because the stock was held in a brokerage account. Initially ordered to vacate his seat on the commission, a state appellate court ruling later overturned the lower court's decision, which allowed Duque to serve out his term as the lone Republican commissioner under Democratic Governor Grey Davis, who appointed four new commissioners from his own political party.

The two remaining Republicans on the commission served as a counter balance to the majority. Jesse Knight came to the commission after a successful career in business beginning with Dole Food Company, where he worked in both domestic and Latin American operations, including a stint as director of marketing for the U. S. and Canadian Dole pineapple business. Immediately prior to his appointment to the commission, Knight was executive vice president of the San Francisco Chamber of Commerce. It is safe to say that Knight saw his role on the commission as representing the interests of business. Knight was the most vociferous, articulate, and relentless advocate on the commission for direct access and customer choice. His advocacy, with the backing of the pro consumer choice coalition, resulted in the commission adopting direct access as part of its restructuring program. After leaving the commission when his term expired, Knight became President and CEO of the San Diego Regional Chamber of Commerce. This job led directly to several executive-level positions at Sempra Energy and its utility subsidiaries, San Diego Gas & Electric and Southern California Gas Company, until his retirement in 2015.

The fifth commissioner during this time was Josiah Neeper, a socially and politically well-connected labor and employment lawyer and civic leader in San Diego, known to Governor Pete Wilson, another San Diegan. Neeper, too, was sympathetic to business interests, from one end of the spectrum to the other, from individual consumers to the utilities. He had no particular ideological bent beyond his general pro business attitude. Neeper used his position to forge compromises, seeking the middle ground, looking for fair and reasonable outcomes, much like the role he played as a labor relations mediator. He saw himself as the proverbial "reasonable man." He held to strict ethical standards and expected a high degree of professionalism from staff and practitioners before the commission. He had no tolerance for businesses that cut corners or used their power to take advantage of consumers. When new telecommunications companies, transport and common goods carriers, or direct access providers were caught misleading the public about service offerings or the rates they charged, Commissioner Neeper used the commission's enforcement powers to crack down heavily on such business enterprises by imposed severe penalties and fines or by revoking their licenses. He was an ally of Commissioner Knight and joined Knight to support customer choice and direct access.

The Failure of Regulatory Reform - Maintaining the Status Quo

One issue the commission needed to address going forward was the matter of rate regulation. To recall from Chapter 2, utility rate determination was traditionally handled in semi-annual or triennial cost-of-service general rate cases. Under this

system, the utility would submit to the commission a showing of its total costs to provide service, a revenue requirement, and propose a rate of return, its profit. The commission's ratepayer advocacy staff and other intervenors would review the utility's proposal, evidence would be entered and a record produced, hearings would be held, and an administrative law judge would render a proposed decision to the commission. A majority of the five commissioners has the authority to adopt a final decision as proposed by the judge or to change all or parts of the decision as it sees fit, so long as the decision, theoretically, is based on the facts in the record and adheres to the law. As a quasi legislative body, the commission often uses its authority to legislate policy while also adjudicating facts in a case. The commission's decision would set the utility's revenue requirement and a second phase of the proceeding would determine how the revenues would be allocated and collected from each class of service -- residential, commercial, industrial, agricultural, etc. -- through rate design. The Yellow Book and the Blue Book, to recall, advocated doing away with this manner of command-and-control, cost-of-service regulation. It was considered to be cumbersome, a waste of resources, and out of step with the evolving competitive market. Furthermore, the conventional wisdom at that time, perhaps naively, held that competition and the discipline of the market would temper future rate increases. Therefore, the commission ordered the three investor-owned utilities to submit performance-based ratemaking plans.

The post hoc prudence review episode described above, as it pertained to power purchases, was viewed by the utilities, in general, and PG&E, in particular, as an

example of regulatory overreach, and explains one reason why the utilities were on board with rate reform. The regulator always has the upper hand. It can find ways to assign blame, allege utility mismanagement, or mete out punishment by disallowing costs or by lowering the utility's rate of return. After-the-fact second guessing of utility management decisions and post hoc prudence reviews by the regulator puts the utility in a vulnerable, no-win position. The commission, as the regulator, has control and the power to intervene if, in its view, the utility misbehaves or if the market goes sideways and believes intervention is warranted to make midterm corrections to policies that may have gone awry. Furthermore, because the commission regulates numerous aspects of the utility's business, it can give with one hand and take away with the other. It can mete out punishment for a transgression in one area of the business when the actual wrongdoing, real or perceived, occurred elsewhere. The commission can cleverly disguise its intentions because it ultimately wields the power and controls the utilities' purse strings.

The commission itself, during a moment of self reflection, recognized the problem of regulatory overreach and the potential for its abuse of power, as well as acknowledging the enormous bureaucratic and economic costs of excessive regulation, which are ultimately borne by the public and witnessed in customer rates. The Yellow Book pondered whether imposing price caps on utility rates was the answer to hold rates steady, mimicking the approach adopted in telecommunications. This method, however, was rejected in favor of an alternative approach. The commission's recommendation was to do away with the traditional method of

account-by-account micromanagement of costs, and instead replace periodic general rate cases with a performance-based system. The question remained, however, whether the commission and its staff would loosen their grip on the utilities and back away from the command-and-control regulation it was accustomed to, since time immoral, and instead adopt a light-handed market-based approach in determining utility revenues and rates. Consumer advocates were skeptical about whether such a system would adequately protect utility customers from profligate utility earnings and still provide customers with acceptable levels of safe and reliable service at affordable prices. The commission was faced with the decision to weigh the right balance between regulatory oversight and the discipline of the market.

Fessler, the law professor, was familiar with mediation and alternative dispute resolution (ADR) in the legal profession. He believed that a form of ADR would be an appropriate model for utility ratemaking. However, practitioners in the regulatory arena, each with a stake in the status quo, argued that utility ratemaking was too complex of a subject, requiring technical expertise and professional engagement in the process. To short-cut a detailed examination of utility costs and performance, to do away with the quasi judicial process, and to substitute it with mediation, would not do justice to the utilities or the consuming public, they argued.

Fessler's decision to find an alternative to traditional cost-of-service rate making was influenced by the fact that several other states had applied some type of incentive regulation to electric utilities. Paul Joskow, a Professor of Economics at the

Massachusetts Institute of Technology, argued in the academic literature and before state regulatory commissions across the country, that the cost-of-service approach had serious practical limitations (Joskow and Schmalensee 1986). Jaskow pointed out, first, that because commissions typically do not adjust prices between rate case cycles, this regulatory time lag, has real consequences. It does not provide utility management with up-to-date financial performance information to know whether the company is earning close to the expected "fair" level of return set by its commission or whether its pace of spending was being directed in the right places. With imperfect information the regulator cannot monitor the performance of the regulated utility. Nor does it give adequate real-time price signals to customers. A second limitation with cost of service, Joskow noted, is that regulators are not bound to set rates to cover all of the costs incurred by utilities. A commission may decide to "disallow" certain costs that it deems imprudent. Some states, including California, prohibit retroactive ratemaking. Nonetheless, cost-of-service ratemaking, in practice, forces the regulator to make judgment calls about the wisdom of management decisions, which can lead to second guessing, after-the-fact prudence reviews, and decisions to disallow costs. We have noted the example of the risks associated with post hoc prudence reviews in the case of PG&E's power purchases. Joskow's academic work provided both a theoretical framework and a practical guide for regulators, including the Fessler-led California commission, to design and advocate for an alternative incentive- or performance-based system.

An incentive- or performance-based ratemaking method was considered by Fessler to be an acceptable approach, a close-enough kin to alternative dispute resolution. The utilities complied, to one extent or another, with the commission's desire to do away with resource and time consuming cost-of-service rate making proceedings and to experiment with PBR. However, the experiment was relatively short-lived. There were two experiences with one type or another of performance-based incentives that ultimately led the commission to abandon PBR, for the most part, and stick with cost-of-service ratemaking. One experience was with SDG&E's and SCE's performance-based ratemaking; the other was with the incentive-based revenue and earnings mechanism adopted for PG&E's Diablo Canyon nuclear power plant. Both examples demonstrate how bureaucratic reform efforts were stifled by vested bureaucratic interests when they perceived a threat to their position in the system.

Incentive-Based Ratemaking for PG&E's Diablo Canyon Nuclear Power Plant

PG&E's Diablo Canyon nuclear power plant was placed into commercial operation in two phases: in 1985 for Unit 1, and in 1986 for Unit 2. Construction of Diablo Canyon originally began in 1968. After PG&E obtained a preliminary license to operate the plant, Pennsylvania's Three Mile Island (TMI) nuclear power plant incident, in 1979, caused the Nuclear Regulatory Commission (NRC) to temporality suspend licensing of new nuclear generating stations. Based on an inquiry into the safety of TMI, the NRC required further safety modifications to all nuclear power plants under construction, including Diablo Canyon, which by that time was nearly

complete. A subsequent design review, in 1981, revealed a mistake in certain design calculations and the infamous "mirror image" problem. The two generating units at Diablo Canyon sit side-by-side, mirror images of each other. Design engineers mistakenly overlooked this fact and made errors in design calculations. The problem, discovered by a junior-level civil engineer, caused further delays in construction, requiring PG&E to correct and verify its design calculations. Needless to say, these delays, whether caused by PG&E's negligence and mismanagement or by new regulatory safety requirements, drove up the final cost of the power plant to a staggering $5.6 billion dollars. PG&E obviously had its financial interests and those of its investors and shareholder to protect. It sought to collect every dollar spent on the design and construction of the plant from its ratepayers. The company expected the commission to uphold its end of the regulatory compact. On the other side, consumer advocates and environmental organizations opposed to nuclear power wanted PG&E and its shareholders to absorb all cost overruns (Wellock 1988). The commission's Division of Ratepayer Advocates claimed that $4.4 billion in previous costs incurred by PG&E to design and construct Diablo Canyon should be disallowed from recovery in PG&E's future electricity rates.

The purpose here is not to recount the entire saga of the Diablo Canyon case, but to provide sufficient background to draw a lesson about the commission's experience with performance-based incentives for ratemaking. Litigation concerning the recovery of Diablo Canyon costs was extensive and took several years to reach resolution. In the end, the commission and PG&E found an elegant solution to

address the issue of cost recovery, one that some stakeholders begrudgingly agreed to accept as a reasonable balance between risk and reward.

Nuclear power plants are a base load resource, designed to operate around the clock 24 x 7, year-in and year-out. At the time Diablo became commercially operational, in the mid 1980s, the annual average generating capacity for nuclear power plants nationwide was approximately fifty-eight percent. This meant that, on average, the nation's fleet of nuclear power plants ran only slightly more than half the time, taking into account scheduled outages for routine maintenance and refueling. Given PG&E's track record with errors in design calculations and alleged mismanagement during construction, PG&E's opponents believed that the company's operation of the plant would never exceed, let alone meet, the fifty-eight percent industry average.

In settling the case, PG&E took the bet and agreed to an incentive-based cost recover mechanism based on a proposal from PG&E and the commission's ratepayer advocacy staff. To settle the case, PG&E, the CPUC's Division of Ratepayer Advocates, and California Attorney General, John Van de Kamp, on behalf of the citizens of the state, proposed that PG&E's investment costs and return on rate base for Diablo Canyon be recovered in future rates exclusively under a non-traditional performance-based ratemaking mechanism.[34] Under the terms of the settlement, customers would pay for the power produced and consumed, not for PG&E's

[34] California Public Utilities Commission (1988), Decision 88-12-083.

investment in the power plant. This method was a deviation from the normal ratemaking process, in which utilities earn a return by recovering their investment costs. Moreover, this plan was meant to place the financial risk of operating the plant on PG&E and its shareholders. The settlement agreement assumed that if Diablo's capacity factor matched the fifty-eight percent industry average, the result would be an equivalent disallowance of $2 billion of the company's $5.6 billion investment. If, however, the plant outperformed the industry average, the effective disallowance would be less. The revenue collected by PG&E from Diablo's output was set by multiplying a specific cents-per-kilowatt-hour figure by the actual amount of power produced. If revenues were higher than costs, the difference would flow to PG&E's shareholders; if, on the other hand, costs outpaced revenues, the shortfall would be borne by the shareholders. The commission approved the settlement against the vigorous opposition of most other parties. The consumer advocacy organization TURN's leader, Sylvia Siegel, called the settlement a "sell-out." [35]

PG&E has managed to operate the plant efficiently, and the capacity factor for each unit has significantly outperformed the industry average, reaching capacity factors above ninety percent for most years. It does not take a mathematical genius to figure out that PG&E's shareholders did not suffer the financial hit settlement parties, including PG&E, had assumed. From PG&E's perspective, the incentive mechanism worked as designed. Given clear incentives, management took the

[35] "Diablo Canyon Pact Calls for PG&E to Pay Full Cost," *Los Angeles Times*, June 28, 1988; "Diablo Pact Could Leave Utility Wary," Special to the *New York Times*, June 28, 1988.

necessary steps to control costs and focus attention on operational performance. The commission established an independent safety committee to oversee Diablo's operations to guard against the company cutting corners to make money and to ensure that public safety was not compromised.[36] Diablo has had a clean safety record.[37]

Consumer advocates and environmental groups opposed to the settlement have been critical of the incentive mechanism, claiming that it did not achieve the intended results to disallow costs or to punish PG&E for alleged mismanagement. Critics considered the incentive mechanism a failure, labeled Diablo Canyon a "cash cow," and blamed the Diablo settlement for driving up customer rates. The commission staff, itself a signatory to the settlement and originally a proponent of the incentive pricing mechanism, did an about face. A few short years after the settlement was adopted by the commission, during the 1990s when high rates were a grave concern, the commission staff conspired with other parties to undermine the terms of the Diablo Canyon settlement. Their actions were successful. The commission forced PG&E twice in the ensuing years to "voluntarily adjust" the pricing formula to reduce

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[36] Perrow (1984, 1999) provides a useful framework for understanding and evaluating the social risks associated with complex technology, including nuclear power plants.

[37] In 1976, the California Legislature amended the Warren-Alquist Act to require the Energy Commission, prior to any new nuclear generating plants being built, to certify that there is sufficient capacity to store spent fuel rods, and to establish a moratorium on the certification of any new nuclear generating plants until the federal government has approved and established a means for the disposal of high level nuclear waste. A legal challenge to this amendment resulted in the United States Supreme Court case *Pacific Gas & Electric Co. v. State Energy Resources Conservation and Development Commission*, which upheld the amended Act. Source: California Energy Commission.

the impact on customer rates. The experience with Diablo made the commission staff gun shy when it came to experimenting with pricing incentives and tempered its appetite for trying new ratemaking schemes. However, economic and political conditions change. So do commissioners and staff leadership. Under a new regime and in a different time, the commission was ready to experiment again with performance-based ratemaking following the arguments staff advocated in the Yellow and Blue Books.

Performance-Based Ratemaking: A Second Bite at the Apple

SDG&E was the one electric utility to follow the commission's lead and present a performance-based ratemaking proposal in a general rate case.[38] The commission sometimes treated SDG&E differently than the two large monoliths, PG&E and SCE. Compared to its two much larger siblings, SDG&E operates in a relatively small service territory, the City of San Diego and its surrounding area. SDG&E and its parent, Sempra Energy, were reputed to be a more enlightened business enterprise and more progressive-minded in most matters, including ratemaking, than the other two electric utilities. The commission believed that it could use SDG&E as a test

[38] SCE also had a successful run with PBR for a few years. I have chosen to use SDG&E, rather than SCE, as the example here to avoid redundancy. One interesting note to point out is that SCE ran afoul with the CPUC in its handling of PBR. The company was given an incentive and was rewarded financially for superior customer service performance, until it was discovered that employees were cheating the system by falsifying reports and customer satisfaction survey statistics to boost earnings. Needless to say, the offending employees were punished and the company was penalized financially. This episode further soured the commission's and consumer advocates' attitudes toward PBR.

case for PBR, to experiment on a small scale before adopting it wholesale statewide. Suffice it say that the experiment went well for a time. SDG&E enjoyed strong earnings for a period following its first venture with performance-based ratemaking. SDG&E's strong financial performance had mostly to do with its management practices and its focus on operational performance rather than on the method of ratemaking. The PBR mechanism adopted for SDG&E gave the utility clear signals and incentives to manage operations efficiently and to control costs, which yielded a higher than expected rate of return. Rather than adjust the mechanism, the commission retreated from PBR and reverted back to the tried and true method of cost-of-service ratemaking. Thus, the utilities were spared the inconvenience of retooling their internal procedures, each to invent its own PBR mechanism. To this day, the utilities and the commission still, by and large, use the cost-of-service general rate case approach to determine revenues and rates for the electric utilities.

The Ideology of "Professionalism" and the Limits of Regulatory Reform

The two case studies involving experimentation with performance- and incentive-based ratemaking illustrate how structural interests intervene to frustrate reform initiatives and how bureaucracy tends to revert to the status quo. Alford observed the same phenomenon in the debates over health care reform in New York City. One additional factor conspired against the adoption of progressive rate reform: the ideology of "professionalism." "Professionalism" is both an ideology and a tool used by vested structural interests, each in its own particular way, to preserve the status

quo, and to protect its status and position in the bureaucratic structure. (Wilensky 1964).

"Professionalism" and "technical expertise" are the tacit requirements for gaining "standing" and "entry" for participation in the regulatory process. Knowledge of the bureaucratic norms of behavior and proficiency in the esoteric language and subject matter of energy regulation are further requirements for entry and standing. Well healed corporations and other powerful interests have the resources to retain lawyers, technical experts, and lobbyists to work on their behalf. Insurgent groups often lack the resources to participate effectively in the regulatory arena to challenge the dominant interests or to have their voices heard by decision-makers. Moreover, the commission's "quasi judicial" process is a bureaucratic means used to control the regulatory agenda and to create barriers for entry and participation by disadvantaged and outside interests. The commission serves as master, deciding the fate of all who appear before it. The commission, in exercising its fiduciary duties, must pay attention to the utilities' operational and financial performance. It needs to ensure the financial health of the utilities to guarantee that it has the resources to provide safe and reliable service, while simultaneously providing consumer protection safeguards. Therefore, the utilities, by default, have greater access to commission staff and decision-makers, and to the commissioners themselves, in spite of ex parte rules which govern access to and communications with decision-makers.

In the regulatory context, "professionalism" is used effectively by bureaucratic interests to maintain control of the regulatory process. The dominant players, namely

the utilities and large corporate interests, have the means to marshal whatever resources may be necessary to present a strong showing to win or defend a case in litigation. The utilities are staffed with experienced lawyers and professional staff. They also have the financial resources to acquire outside expertise from consultants and technical experts whenever needed. Plus, they are experts at the game, having developed the institutional knowhow and expertise to participate effectively in the regulatory process over many decades of practice.

Challenging interests in the form of the trade associations representing the large manufactures and industrial customers are equally endowed to marshal resources to confront the utilities and to protect or advance their own economic interests. They, too, have the resources and means to retain lawyers and other professional experts to battle the utilities on more or less equal terms.

The situation is somewhat different for the disadvantaged classes. The commission's legal and ratepayer advocacy staff typically cannot match the level of professional or technical expertise enjoyed by the utilities or the large corporate interests. For one, the state cannot equal the remuneration offered by the utilities or the large commercial interests. Many of the commission's staff choose public service for ideological reasons over economic considerations. The same goes for the nonprofit consumer advocacy organizations, such as TURN and the NGOs. The NGOs, as outsiders, it was argued above, do not share equal status with the insider stakeholders. Their interests typically lie elsewhere, in the legislative arena or in

grass roots organizing and fund raising, outside of the regulatory arena. Their appearance in the regulatory process is intermittent; they show up when they have a particular issue to advocate and their arguments often are not given equal consideration compared to the others.

To level the playing field and to encourage public participation in its processes, the commission, with the support of the legislature, instituted an "intervenor compensation" program.[39] Consumer organizations and NGOs may receive reimbursement for the costs they incur to participate in commission proceedings. The standard to qualify for intervenor compensation is fairly low and it is applied quite liberally by the commission. To qualify for compensation a public participant merely needs to demonstrate that (1) it represents a meaningful segment of the public at large, and (2) its participation made a "substantial contribution" to the outcome of the proceeding, meaning not necessarily that its position prevailed, buts merely that the commission, namely, the administrative law judge presiding over the case, recognized

[39] "The California Public Utilities Commission (Commission) is responsible for assuring that California utility customers have safe, reliable utility service at reasonable rates, for protecting utility customers from fraud, and for promoting the health of California's economy. As a public agency, the Commission depends on input, questions, and feedback from the general public. By hearing from different perspectives, the Commission is better able to make informed decisions that consider the impact of utility costs and services on all Californians. The California Public Utilities Code allows qualified parties in proceedings before the Commission to request compensation for their participation (allowable fees and costs). The Intervenor Compensation Program is intended to ensure that individuals and groups that represent residential or small commercial electric utility customers have the financial resources to bring their concerns and interests to the Commission during formal proceedings." Source: CPUC website, "The Intervenor Compensation Program." Features of the program were most recently updated by Senate Bill 512, with an effective date of April 4, 2017.

the credibility of the party's arguments by citing such in the written case record. The cost of the intervenor compensation program is borne by ratepayers. If the commission awards intervenor compensation to a public participant, the amount of the award is rolled into the rates of the utility whose case was the subject of the proceeding. The intervenor compensation program, as a means of including the "public" in the formal process, is a form of "cooptation," transforming "outsiders" into "insiders," channeling grassroots insurgency into the routine structure of the bureaucratic process. With insider status comes the expectation of adhering to certain behavioral norms and professional decorum. Being accepted into the club and playing by the rules may be attractive to some interest groups because it brings financial reward and legitimacy. It certainly rewards the commission by demonstrating to the public and to the legislature that its process is open and gives a fair hearing to all that come before it.

One final interest to consider is that of the commissioners themselves. They, too, have a place in the system and occupy an important position atop the bureaucracy. We have shown how, as individuals, the commissioners are not immune to political pressures and bring their own ideological perspectives with them to the job. Their motivations, however, extend far beyond the job. As political appointees, commissioners are expected to conform to the ideology and carry out the policy directives of the governor who appointed them. However, one would expect the commissioners themselves to be indifferent with respect to the technical form that ratemaking takes, whether it be the traditional cost-of-service approach or the

alternative performance-based method. We saw, for example, that Commission President Fessler advocated for change and urged the commission to adopt alternative dispute resolution or some form of PBR. One cannot over look the fact that the commissioners, as a body, endorsed the staff's recommendations contained in the Yellow and Blue Books to reform the regulatory system to keep stride with the evolving competitive market.

In a narrow formal sense, the commissioners' role in the bureaucratic ratemaking process is that of decision-maker. Perched above the fray, the commissioners' involvement in the ratemaking process comes after the stakeholders finish battling in the adjudicatory process, and after the judge presents a proposed decision to them to decide the final outcome of a case. This, however, is a far too limited view of the role that commissioners play and the unique position they occupy atop the regulatory bureaucratic structure. Two of the Commissioners, Dan Fessler and Jesse Knight, as much as any other stakeholder interest, each took it upon himself to drive the regulatory process and to press for their own respective vision of market reform, albeit from different perspectives. Commissioners are the target of special interests and are pressured and lobbied from all sides. The official role requires that commissioners balance competing interests and ultimately serve the larger "public interest." Yet, as political actors caught in the web of the larger political economic structure, they have their social status and reputations at stake and, for some, their careers to manage. Their position of power and their decision making role gives them the unique opportunity to steer outcomes in the ideological direction they favor.

In conclusion, the experience with incentives and performance-based ratemaking is an object lesson in how vested structural interests with a stake in the status quo resist change and opt for business as usual to protect their economic or political interests or their professional status in the system. Reform initiatives could not overcome bureaucratic inertia. The status quo was maintained in the ratemaking process, but not on account of the dominant side. The less powerful, often marginalized and repressed consumer interests, together with the professional staff bureaucrats, prevailed. They used their positions in the bureaucratic structure and their professional status to block reform. In this instance, they found an opportunity to exploit to their advantage. Fearing PBR would demonstrate that a streamlined system and less direct regulatory oversight would cause them to lose what little control they have in the regulatory process and ultimately cost them jobs, the commission staff and their allies -- the ratepayer advocates, the lawyers, and the administrative law judges -- were able to convince the commission to jettison PBR and continue with cost-of-service ratemaking. Efforts at bureaucratic reform were stifled because vested interests, among the structurally disadvantaged, were threatened. They organized effectively to obstruct reform.

Alternative Policy Proposals for Market Reform

Now, with the issue of regulatory reform put aside for the time being, the commission was able to turn its attention once again to the larger question of market reform. The division between the commission's majority and minority camps

crystallized in an interim decision, issued in May, 1995. [40] That decision put forth two broad policy alternatives for restructuring the market. The first alternative, offered by Fessler for the majority, was patterned after the U. K. model. California would create a centralized power market, "PoolCo," for short-term, spot energy sales. The power pool would be managed by an independent operator that would dispatch power and arrange transmission service for generators. In order to participate in the market, all generating units, utility- or independently-owned IPP facilities, would be required to bid their products into the market to sell their electricity at no greater than the market clearing price. The commission would assume a laissez faire posture and allow energy traders and marketers to organize the market. Accordingly, electricity would be considered no different from any other commodity, be it soybeans or pork bellies. To be clear, this scheme represented a radical departure from the traditional view of electricity as a vital service in need of strong regulatory oversight to protect consumers from the whims of the market. It represented a victory for markets over bureaucratic regulation.

The second alternative, favored by Knight, was to create a competitive retail market by allowing the consumer direct access to suppliers through bilateral contracts, also known as "retail wheeling." This system was understood to be simpler and to require less operational management than the Fessler alternative. Like the "PoolCo" model, it was believed to require less command-and-control regulation

[40] California Public Utilities Commission, Decision 95-05-045, May 24, 1995.

because consumers would be given the power to make their own choices regarding energy supply. Following in the tradition of the "rational choice" school of economic thought, this approach assumed that individuals are capable of making rational economic choices in electricity. The commission, however, would not altogether abandon its oversight responsibilities to protect consumers from abuse and market manipulation. Safeguards would be installed as a component of the regulatory structure to watch over the new energy market service providers.

In short, both the "PoolCo" and direct access models were seen by their respective advocates as valid ways to achieve a healthy, vibrant competitive market environment for the benefit of consumers. These proposals, not surprisingly, however, drew strong reactions from the various organized interests and, once again, coalitions formed in response to the commission's two proposed alternatives.

Structural Interests and Coalition Formation II - Realignment of Interests

Coalitions are not necessarily stable by nature. Interest groups are generally not altruistic, nor do they strictly adhere to a set of guiding principles. Individual coalition members pursue their own self interests and act pragmatically and opportunistically seeking economic or political advantage, as necessary. If interests align, then parties join together. However, alliances shift when political conditions change. In the months following the commission's interim decision to reorganize the market, two such critiques were put forward by two separate coalitions, each offering competing recommendations in response to the commission's proposals.

The first set of recommendations was offered by a coalition of four parties: Southern California Edison; two of the groups representing large and influential energy users, CLECA and CMTA; and the independent power producers, represented by their trade association, IEPA. Their ideas were submitted to the commission in the form of a *Memorandum of Understating.*[41] The coalition's intent was to garner support for their recommendations from all of the other interested parties, namely PG&E and SDG&E, customer groups, environmental organizations, legislators, organized labor, and the CPUC ratepayer advocacy staff. The MOU coalition parties believed that their specific recommendations were improvements to the commission's design recommendations. They hoped that by demonstrating broad support from a cross section of the diverse interests they represented, the commission would change its course and adopt their approach. The signatories to the MOU, moreover, believed their proposal was a reasonable compromise because it gave something to everyone. In short, it was a strategy to co-opt the other stakeholders.

Their proposal blended the main elements of the commission's proposal -- a power pool and direct access -- in the belief that theirs would "accelerate and enhance the development of a competitive electricity industry in California," [42] a goal, by now,

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[41] "Memorandum of Understanding on Joint Recommendations Among California Manufacturers Association, California Large Energy Consumers Association, Independent Energy Producers, Californians for Competitive Electricity, and Southern California Edison Company," September 14, 1995, filed in the CPUC Restructuring Docket, R.94-04-031 and I.94-04-032.

[42] *Memorandum of Understanding*, p. 1.

shared by all but the most skeptical that market reform was a good idea. Specifically, the MOU's market structure included three key features:

1. an *independent system operator (ISO)* to manage the dispatch of power and to ensure equal, nondiscriminatory access to the transmission system;
2. a *power exchange (PX)*, separate from the utilities and the system operator, for short-term generation transactions where buyers and sellers would be free to participate through a bidding system; and
3. *voluntary customer direct access (DA)*, including bi-lateral contracts, phased in over a five-year period, to ensure an orderly transition taking into account the practicalities required to set up and operate the new market.

The MOU also contained a proposal for the adoption of a *"nonbypassable competitive transition charge"* (CTC) to enable the utilities to recover their uneconomic sunk generation costs. The coalition parties argued, consistent with the commission's thinking, that in order to implement a new market structure that relied on competition instead of administratively determined pricing, the utilities needed to recover commission sanctioned, "prudently incurred" investments that were now above market, a relic of a bygone era of regulation. This was a major hard fought concession awarded to the utilities by the commission to gain the utilities' tacit support to move forward with the restructuring program.

But in order for the MOU Coalition's cooptation strategy to succeed and to garner broad support across the spectrum, other interests, too, would need concessions to

claim victory. Hence, customer interests, especially the large corporate energy users that wanted the freedom to choose their supplier got direct access. The majority bloc of the commissioners who wanted a free and unfettered spot market got the power exchange. Parties concerned about collusion among generators or their ability to exercise market power got a separate power exchange and an independent transmission operator, as well as an independent market surveillance oversight committee to watch for indications of market abuse. Customers were given a pledge by SCE, the leading proponent and the only utility in the Coalition, that it would pursue the goal of reducing its rates by twenty percent over the next five years, setting a challenge to the other two utilities to match. The rate reduction proposal was a not-so-well disguised ploy to co-opt the interests of the small business and residential energy users. These customers, represented by DRA, TURN, and UCAN, would enjoy the immediate benefit of a rate decrease. Environmental groups were promised that, prior to implementation, the commission would undertake the necessary steps to subject the plan to legal review to ensure that the new market structure and the institutions created for its operation, the PX and the ISO, were in compliance with state and federal environmental laws and regulations (CEQA and NEPA) . Finally, environmental groups and the consuming public at large were given a commitment that the commission and the utilities would continue to invest in energy efficiency programs, public interest R&D, and lend support to programs to aid the underserved.[43]

[43] The Framework Sponsors, as they came to be known, included UCAN, the Union

The MOU motivated a group of eleven organizations representing a diverse set of consumer and environmental interests who "expressed concerns about a number of aspects of the restructuring, including protections for small and low-income customers, preservation of energy conservation programs, support for renewable energy, and research and development for energy efficiency"[44] (Sweeney 2002: 29). Debate over the MOU Coalition's proposal continued, but the stage was finally set for the commission to weigh in and decide the direction restructuring would take.

The Preferred Policy Decision

The commission's final decision, which would determine the future course of the industry in California, was anxiously anticipated by all parties. The basic policy contours and the market design were signaled by the commission in its May interim decision, yet modifications were proposed by the various interests and coalitions engaged in the debate, most notably in the proposal advanced by the MOU coalition. Certainty in the outcome of a commission decision is never guaranteed until the final

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of Concerned Scientists, TURN, the Sierra Club of California, NRDC, EDF, the Center for Energy Efficiency and Renewable Technologies (CEERT), the California Public Interest Group, California/Nevada Community Action, and the American Wind Energy Association (AWEA). Their submission was entitled "Framework for Restructuring in the Public Interest." See Blumstein, et al. (2002:9).

[44] Sweeney argues that the market structure advocated by the MOU parties added unnecessary complexity compared to the commission's alternative proposals. Whether this added complexity contributed to the energy crisis and the eventual collapse of the restructured market is open to debate. Other factors were also at work beyond the organizational structure of the two new institution -- the PX and the ISO -- and the various compromises and concessions made to the various interests. More on this subject will be discussed in the following chapter when considering the implementation of the new market design.

votes are cast. When the commission assembled for its final public meeting of the year, the auditorium was packed and the overflow crowd was shuttled into adjacent hearing rooms to listen over a piped-in audio broadcast of the meeting. The several years of study and debate finally culminated in a decision by the commission on December 20, 1995. [45] Best known as the *"Preferred Policy Decision,"* the commission reaffirmed its core "conviction that the vertically integrated electric utility is not compatible with the institutions of a competitive market for electric services." [46] Echoing the majority's view expressed the previous May, the commission reaffirmed its "conviction that the interests of all Californians requires the creation of a transparent, visible spot market for electric generation and that operating control over all transmission assets be divorced from the underlying pattern of ownership and vested in the hands of an independent system operator which will operate these combined assets as a single, statewide grid." [47] The Decision spoke optimistically about the benefits that consumers would realize through a flourishing direct access market, while assuring attendant consumer protections. The Decision addressed the issue of utility stranded costs and set forth what was assumed to be an orderly transition to the brave new world of competition and customer choice.

[45] California Public Utilities Commission, Decision 95-12-063, December 20, 1995.

[46] Ibid:8

[47] Ibid:8.

Closing

The Preferred Policy Decision closed a significant chapter in the saga of California's endeavor to restructure the electricity industry and to reform its regulatory regime. The Decision was the commission's work product, but it had the finger prints of every major stakeholder interest. The decision set the framework, but much work still needed to be done to implement the new world order. The commission issued a roadmap to guide and direct implementation of its policy order.[48] Once again, the regulatory arena became the locus of activity as stakeholders formed working groups to figure out the details. Activity subsequently shifted to the legislature because some features of the restructuring order required amendments to the commission's statutory code and to ensure that the new institutions being built to implement the commission's policies did not violate existing law. The commission anticipated that the transition period leading to the opening of restructured market would commence no later than January 1, 1998.[49] Stakeholders were put on notice that their work was to be completed in a matter of two short years. The bell had rung and the clock had began to tick.

[48] California Public Utilities Commission, Decision 96-03-022, January 10, 1996.

[49] As work commenced, Jan Smutney-Jones, President of the Independent Energy Producers Association, exhorted the stakeholder working group teams by reminding them that "January 1, 1998 is not only a good idea, it's the law!"

CHAPTER FIVE

MARKET AND REGULATORY REFORM: DESIGN, IMPLEMENTATION, COLLAPSE

The previous chapter examined the regulatory process and the conflicts among the various structural interests that led to California's market and regulatory reforms. This chapter continues the analysis of the policy outcomes examined in the previous chapter, but shifts the focus of attention first to the state legislature, and then back to the regulatory arena. Here, again, competing interests continued their efforts to shape the new market structure to advance their own particular economic interests and to conform the market to fit their respective ideological visions. The chapter briefly chronicles California's experiment with electricity industry restructuring and resulting market failure. The chapter then looks past the California Energy Crisis and presents the regulatory reform initiatives undertaken in the aftermath of the crisis that set the future course for "greening" California's economy.

The Roadmap for Implementation

After eighteen months of public debate, the commission issued its restructuring decision on December 20, 1995. A few short months later, in March, 1996, the commission issued a decision that set forth a roadmap[50] to guide and direct the next steps to implement the restructuring order. It found that working groups with "broad stakeholder representation [would be] an effective means of focusing, narrowing, and

[50] Decision 96-03-022, March 13, 1996.

coordinating the interrelated issues of electric restructuring." [51] The transition period was to commence no later than January 1, 1998. The Roadmap Decision ordered the parties to work with staff members from the CPUC and the CEC, under the supervision of an assigned administrative law judge and the direction of the assigned commissioner, Dan Fessler, President of the Commission.

Fessler sought to keep his hand on the levers of control. He was the driving force for change within the commission and he had the majority behind him. Yet the preferred policy decision went only so far to endorse his preference for market reform. How the utilities and the commission would respond to the call for regulatory reform, and the manner in which utility revenues and customer rates were to be determined, was still an unresolved issue. But the more immediate issue for Fessler was the shape of the market. If he had his druthers, Fessler would have been content with a centralize power pool and a pure spot market for short-term electricity transactions as a sufficient condition for the restructured market. Recall that Fessler ended up on the losing side of that debate. He was forced to accept the fact that direct access and customer choice through physical, bilateral contracts were necessary features for the restructured electricity market to succeed. Fessler made this concession not because he wanted to make peace with his colleagues, but because of the political pressure of the market participants, led by the large commercial and industrial energy users.

[51] Ibid (1996:45).

Economics or Ideology

Fessler's views about market design were highly influenced by two events. The first was his exposure to the U. K's experience with electricity deregulation, which relied heavily on a spot market rather than on long-term, bilateral contracts between willing buyers and sellers. Favoring the short-term rather than the long-term was both an ideological bias and an economic calculation for Fessler.

California was flush with generating capacity during the 1990s, thanks in large part to the commission's enthusiastic embrace of PURPA guidelines (Sweeney 2002; Blumstein et al. 2002). The commission's generous avoided-cost pricing was instrumental in jump starting the QF and independent power producer industries in the state. The commission authorized the utilities to sign a large number of "standard offer" contracts [52] when short-term wholesale electricity prices were cheap because of abundant supply from the QFs, on top of the capacity available from utility-owned generation. Early standard offer contracts obligated the utilities to purchase power from the QFs for up to thirty years. The decade of the 1980s is often referred to as a "gold rush" for the QF industry. In fact, the commission's decisions to compel the utilities to sign standard offer QF contracts led to a state of oversupply, an excess of capacity, and more power available in the market than needed to meet consumer

[52] The California utilities purchased power from qualifying facilities under standard offer (SO) power purchase agreements. These contracts had two components: an *energy* rate for electric energy delivered and a *capacity* rate that reflected the cost of capacity avoided, that is capacity that did not have to built by the utility. Early standard offer contracts specified long-term fixed-capacity rates and fixed energy rates, for periods which ranged from one to thirty years. See Pacific Gas and Electric Company (1992:367).

demand. In addition, the generous price terms embedded in the standard offer contracts contributed to the high electricity rates that caused the consumer rebellion a decade later in the 1990s, and led to the demand for rate relief and customer choice, voiced most loudly by big industry.

The question never satisfactorily addressed in the restructuring debate was whether low prices were sustainable in the long run. Acknowledging that markets are unpredictable, the preferred policy decision did, however, authorize the utilities to hedge their positions by entering into financial "contracts for difference." The utilities, however, expressed a great deal of reluctance to enter into such contracts because of the ambiguity surrounding the rules and the uncertainty regarding cost recovery. Fessler's bias toward short-term, spot-market transactions was influenced by the commission's experience with long-term QF contracts. In hindsight, most observers recognized that the commission, a decade earlier, made a serious policy mistake by requiring the utilities to sign an excessive number of high-priced, long-term QF contracts. The commission learned an expensive lesson. Thus, Fessler's bias for short-run contracts was a pragmatic policy choice based on the commission's experience, but equally a reflection of a market ideology, best stated by the restructuring decision itself: "Both entry into and exit from [financial hedges], as well as the terms of such contracts are left to the genius of the marketplace and the

will of market participants." [53] These words are telling of Fessler's influence on the decision.

The second major influence on Fessler was also a mix of ideology and economic pragmatism. Fessler's fascination with short-term spot market transactions over long-term contracts may also be traced to the commission's investigation, a few years prior, into PG&E's natural gas business, and Fessler's own role in that endeavor. The size of PG&E's natural gas business was second in the nation only to Southern California Gas Company, headquartered in Los Angeles. In order to serve its growing customer base and aid rapid population and economic growth in Northern California in the period following World War II, PG&E created a wholly owned subsidiary, Pacific Gas Transmission Company (PGT), turning its attention away from shrinking natural gas supplies in California to Canada in order to tap into that abundant source of supply. PGT owned and operated an interstate pipeline to transport natural gas from Canada, across the Pacific Northwest, to California. In addition, two other PG&E subsidiaries were part of the picture. Alberta and Southern Gas Company (A&S), wholly owned by PG&E, purchased gas in the Canadian provinces of Alberta and British Columbia, and sold most of that gas to PGT at the U.S.-Canadian border for the California market. PG&E also owned a forty-nine percent interest in a second subsidiary, Alberta Natural Gas Company (ANG). ANG owned and operated a natural gas pipeline in British Columbia to transport natural gas, specialty chemicals,

[53] California Public Utilities Commission, Decision 95-012-063, op cit. p. 5-6.

and natural gas liquids for PG&E's A&S to customers from Alberta to the U.S.-Canadian border. The commission was suspicious about the potential for self dealing by PG&E Corporation and its subsidiaries. Wearing its consumer protection hat, the commission opened an investigation to determine if PG&E was abusing its monopoly power to the detriment of California customers by overcharging them for natural gas supply. Interstate transportation of natural gas is regulated by the FERC, and PGT's rates and terms of service are the exclusive subject of FERC jurisdiction. Therefore, the California commission's investigation was limited, by law, to PG&E's in-state natural gas rates, but the underlying motivation also contained a bias toward buying form domestic sources.

The commission's investigation into PG&E's natural gas business was initiated at a time when natural gas prices were at an all-time low. New domestic supplies were discovered and being exploited in the Permian Basin in Texas and New Mexico, in the Rocky Mountain region, and in other parts of the American Southwest. New natural gas pipelines were being proposed and existing pipelines were being expanded to reach these new supply fields to transport the new supplies to the California market. Domestic prices for natural gas, particularly on the spot market, were now competitive with Canadian sources.

The economics of the business arrangements PG&E and its PGT subsidiary had with the Canadian suppliers were being called into question by the Fessler-led commission. Most of PG&E's supplies were locked into long-term contracts with

Canadian producers, and most of these contracts were entered into when Canadian supplies were cheaper than domestic sources. PG&E entered into these contracts to guarantee its California customers with a long-term, dependable supply of cheap and abundant natural gas well into the future. The consumer advocates, TURN and DRA, were delighted to jump onto the bandwagon and cheer on Fessler and the commission in its investigation into PG&E's contracts and business entanglements. Any effort to extract economic gain for the consumer at PG&E's expense would be a victory for the consumer interests. In addition, domestic gas producers, marketers, and pipeline developers and operators were enthusiastic about challenging PG&E's Canadian supply contracts if it meant new opportunities for them to supply the California market.

Besides its ideological component, the argument over short-term, spot market transactions versus long-term contracts has a real-world economic dimension. It is analogous to the choice between a variable interest rate versus a fixed interest rate on a home loan. A variable interest rate may be lower in the short run, or at some points during a typical 30-year term, but it carries risk and uncertainty over the long run. In contrast, a long-term fixed interest rate loan provides certainty and a hedge against the ups and downs of the market and fluctuations in interest rates. Here, by analogy, the commission and consumer interests fought for the short-term, spot market at a moment in time when prices were historically low. The commission, led almost single-handedly by Fessler, threatened to force PG&E to abrogate its long-term Canadian contracts, even in the face of the threat of litigation from the Canadian

government in international court for California's alleged interference with international trade agreements.[54] In the end, PG&E succumbed to the pressures brought by the commission and it agreed, under duress, to renegotiate its contracts with its Canadian suppliers to align them with current market prices. Believing that California consumers were being taken advantage of by PG&E's corporate arrangements and alleged self-serving business dealings in the natural gas market, the Fessler-led commission chose to avoid a repeat of that experience in electricity. This was part of the underlying ideological motivation, with the veneer of an economic rationale, for Fessler advocating spot market transactions and a centralized power pool for the restructured electricity market.

Structural Interests and Coalition Formation III - Designing the New Market Institutions

As noted, the commission believed that stakeholder working groups would be an effective tool for resolving market design issues. One such group had previously been formed by a coalition of stakeholders, which had begun working on the structure and function of the Power Exchange and the Independent System Operator. That group, members of the Western Power Exchange (WEPX) steering committee, as the power exchange was initially called, included the three investor-owned utilities

[54] PG&E retained former Secretary of State Warren Christopher, who served under President Jimmy Carter. Christopher was now a partner in the Los Angeles office of the law firm, O'Melveny and Meyers. He was hired to advise PG&E's board of directors and senior management on strategy and to lobby on its behalf with federal regulators and State Department officials in Washington, D. C, and with the Canadian government.

(PG&E, SCE, and SDG&E); CLECA, on behalf of large industrial energy users; market participants, including Mock Resources, a natural gas and power marketer, and the Independent Energy Producers Association, representing the IPPs; staff members from the CEC and the CPUC's Division of Ratepayer Advocates; and a collection of public utilities and their trade association (the Los Angeles Department of Water and Power (LADWP), the Sacramento Municipal Utility District (SMUD), the City of Riverside, the Northern California Power Agency (NCPA), the Southern California Public Power Authority (SCPPA), and the California Municipal Utilities Association (CMUA). [55]

The design and operation of the power exchange and the independent system operator would have obvious consequences for the investor-owned utilities. They would now be required to bid the output of their generation into the pool and purchase their supplies from the power exchange. They would also be required to surrender control of their transmission assets to the independent system operator. The economic shock and cultural adaptation to the new world for the utilities cannot be overstated. Their dominance was eroding right before their eyes. The challengers -- IEP, CLECA, and the other market participants -- also had a huge stake in the how these two new institutions were to be designed and operated. For the consumers, there was the "promise," or more accurately, the hope of rate relief; for the

[55] The larger and smaller members of the public utilities group, respectively, were affectionately, or perhaps derogatorily, known as the "munis" and the "punis."

independent power producers, the economic opportunity to develop projects and to sell into the market.

The publicly owned utilities, however, had no immediate stake in the outcome of the new market structure, as their operations would not necessarily be affected by the commission's restructuring order compared to the profound effect it would have for the investor-owned utilities and for the opportunities it would present for the challengers. The publicly owned utilities' participation as steering committee members was to ensure that the economic interests of their members would not be trampled by the others. Moreover, the jury was out, as far as they were concerned, as to whether or not they would use the power exchange to transact business or voluntarily join the independent system operator. By law, not being bound by CPUC regulation, the public agencies were free to procure power on the open market; they did not need the power exchange to transact business. Moreover, many of the municipal utilities had rights to "preferential" low-cost power from the federal marketing agencies, such as the Western Area Power Administration, which gave them access to an abundant supply of cheap hydroelectric power. The municipal utilities would be able to continue to function as they had with or without the power exchange, though the PX could theoretically offer them a new platform to engage in power transactions. Joining the ISO, however, was a different matter. Membership would require them to surrender control of their transmission assets to the centralized grid operator. Surrendering control was a major obstacle for them, one not to be taken lightly. Surrendering control was antithetical to the ideology of independence

and local control. In the end, the publicly owned utilities decided not joined the ISO and instead to retain their independence.

In addition to working out the design of the power exchange and the independent system operator, the Roadmap identified a few other issues that needed to be addressed. One important question was whether restructuring would have any significant environmental impacts. The commission deemed it prudent to prepare an environmental impact report (EIR). California's Environmental Quality Act (CEQA) requires state and local agencies to identify significant environmental impacts of their actions and to avoid or mitigate such impacts if feasible.[56] CEQA is a self-executing statute, and public agencies are entrusted with CEQA compliance. The State Resources Agency is charged with adopting CEQA guidelines. It does not enforce the rules, but is available to assist state and local government in determining what is and what is not subject to CEQA regulations. The commission's decision to subject its restructuring order to CEQA review was widely viewed as an insurance policy to guarantee that it would not run afoul of environmental laws and regulations. It was also a concession used to co-opt the support of the environmental community. Any lawsuits brought against the commission would certainly delay opening the new market.

[56] The California Environmental Quality Act (CEQA), Public Resources Code Sections 21000-2117E8.

The Legislative Phase - The "Peace Death March" and Assembly Bill 1890

The regulatory and industry reform effort next moved to the state legislature. The commission's restructuring order set the policy direction. Legislation was needed to amend the Public Utilities Code and to provide a legal foundation for the commission to implement certain features of its decision, in particular to establish the two new market institutions, the PX and ISO. Moreover, legislation would presumably boost confidence in the market and give assurance to parties engaging in commercial transactions. Both the legislature and the commission believed that codifying the restructuring order would give them political cover and legitimize their decisions. An open, public legislative process, moreover, would ease any fears among a skeptical public that the market and regulatory reforms were not merely a product of backroom deals, led by politicians and controlled by industry.

The legislative effort was led by State Senator Steve Peace, a Democrat from the San Diego area, who had taken a strong interest in energy matters and backed industry reform. Reform was by now acceptable, to one degree or another, by virtually all private interests -- utilities, large industrial and commercial end uses, environmental groups, consumer organizations and NGOs -- and public agency staff. Stakeholders with a commercial interest -- independent power producers, marketers, direct access providers -- were also in support. The legislature chose to have an open stakeholder process to debate the restructuring bill to further garner public support. Thus, stakeholders encamped to Sacramento and hearings were held throughout the summer of 1996.

Senator Peace was a tough task master. Committee hearings often began in the late afternoon and continued into the wee hours of the night, week after week. Daytimes were spent by stakeholder subgroups hammering out details from the homework assignments handed out by Senator Peace and his fellow committee members during the daylong and evening sessions. Ideas were then presented and debated during the next committee hearing commencing in the late afternoon of the next day. The summer marathon session was grueling and became affectionately known as the "Steve Peace Death March."

The actual restructuring measure, Assembly Bill 1890, was authored by Assembly member James Brulte, a moderate Republican from the Inland Empire in Southern California, who is currently the Chair of California's Republican Party. When the final bill was put into print, Senator Peace called all stakeholders and their legislative representatives and lobbyists to assemble before the joint Senate and Assembly Committee one final time. The purpose was to put on for public display the industry's unanimous support for the herculean feat of successfully reforming the electricity industry, which for more than a century had operated in a now outmoded fashion. AB 1890, once enshrined into law, was going to usher in a brand new world order and provide untold benefits to California's economy and its citizens.

Senator Peace wanted a show of support from each and every stakeholder interest. Representatives lined up for the procession in the hearing room aisle. One-by-one they paraded before the joint committees to express support for the measure by

echoing a simple 'yea' or 'nay' voice vote. Senator Peace got what he was looking for: unanimous support -- somewhat. One party did not signal support by offering a 'yea.' That party was TURN, whose lobbyist said that TURN would remove its objections to the measure, but it did not affirm support. At the close of the legislative session, Assembly Bill 1890 was passed unanimously by both houses of the state legislature at the end of August and was signed into law by Governor Pete Wilson on September 23, 1996. The Governor's Office issued a press release boasting "The Nation's First Plan to Deregulate Electricity Through Competition," and declaring that "This landmark legislation is a major step in our efforts to guarantee lower rates, provide consumer choice and offer reliable service, so one, literally, is left in the dark." [57]

The Restructured Market & New Institutions - Provisions of Assembly Bill 1890

California State Assembly Bill 1890, *The Electric Utility Industry Restructuring Act,*

> "would amend the Public Utilities Act to require that the commission undertake various actions, including the facilitation of the efforts of the state's electrical corporations to develop and obtain authorization of the Federal Energy Regulatory Commission for the creation and operation of an Independent System Operator and an Independent Power Exchange, and the authorization of direct transactions between electricity suppliers and end use customers, subject to implementation of a nonbypassable charge." [58]

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[57] "Restructuring California's Electric Industry," Press Release. Office of Governor Pete Wilson. September 23, 1996.

[58] California State Assembly Bill 1890, "*The Electric Utility Industry Restructuring Act*." California Public Utilities Code Section 300 (l) (4) was amended to read: "These new market institutions should commence simultaneously with the phase in of customer choice, and the public will be best served if these institutions and the nonbypassable transition cost recovery mechanism referred to in subdivisions (s) to (w), inclusive, are in place simultaneously and no later than January 1, 1998."

The key provisions of AB1890 essentially codified the policies contained in the CPUC's December 1995 restructuring order. It is worth noting them here to complete the picture of California's market design because of the role each played in what happened in the ensuing months and years, and ultimately in what went wrong.

The New Market Structure

Direct Access (DA) -- Customers in the franchise service territories of the investor-owned utilities subject to CPUC regulation were allowed to shop for power in an open market, and were no longer restricted to buy power only from their local utility company.

Independent System Operator (ISO) -- AB 1890 created an independent, statewide transmission system operator. The investor-owned utilities would retain ownership of their transmission assets, but were required to transfer operational control of their facilities to the Independent System Operator. The ISO was charged with the responsibility to maintain reliability of the grid and to ensure equal access to the transmission system by all producers, consistent with FERC's open access regulations and federal law.

The role of the ISO, now codified by AB1890, reflected the commission's vision of the ISO as described in the commission's December 1995 decision, except for one important feature: the mandate to ensure reliability, which was added to the bill during the legislative session. As originally envisioned by the commission, the purpose of the system operator was to coordinate scheduling to dispatch power and to

provide nondiscriminatory access to the transmission grid. Hence, the importance of its role as an entity independent of the interests and influence of any one particular market participant, particularly the investor-owned utilities, each of which retained ownership of its transmission assets. Reliability, per se, was not originally a central feature of the ISO's function. The mandate for reliability was added when, on August 10, 1996, during the midst of the legislative debate, the Western electric grid experienced a massive blackout. The following day, in legislative session, Senator Peace added the requirement for reliability to the restructuring bill.

Power Exchange (PX) -- AB 1980 also created a Power Exchange. The PX would operate like a commodities market where power producers would compete to sell their electricity generation in response to bids submitted by buyers. In addition, the PX would create a "pool" or "spot market" where hourly price information would be made publicly available. The PX would solicit bids from electricity buyers and generators and choose the lowest generation bidders until the PX had enough electricity supply to meet demand. Participation in the PX was voluntary for all buyers and sellers other than the investor-owned utilities whose participation was mandated by law. AB 1890 established a four-year transition period to enable parties to adapt to the new commercial system. The investor-owned utilities were required to bid most of their generation into the PX and buy the power they needed to meet their customers' needs from the PX. In contrast, non utility, independent power producers were given the option to sell power directly to consumers through bilateral contracts.

Electricity Oversight Board (EOB) -- The legislature found that in order to ensure the safe and reliable delivery of electricity, there should be a governing body to oversee the functioning of the independent system operator and the power exchange.

Financing the Transition

Stranded Investments -- As previously noted, the investor-owned utilities had made huge capital investments in utility infrastructure, including power generating stations, in order to meet the CPUC requirement that they provide sufficient quantities of electricity to meet the needs of California's consumers. These investments were financed by the utilities, based on the assurance, implicit in the regulatory compact, that repayment of their investment costs would be made through future electricity sales. In the restructured market, some of these power plants, particularly the old inefficient post-WW II vintage plants, would likely become "stranded," that is, they would not be able to operate competitively in the new marketplace against newer, more efficient plants. California's restructuring legislation decided that all customers should pay a "competition transition charge" to the investor-owned utilities to meet past financial obligations made on customers' behalf.

Competition Transition Charge (CTC) -- The new electricity restructuring legislation provided for an accelerated recovery of the investor-owned utilities' investments through the competition transition charge. Recovery of the utilities' past investment costs was already built into the utilities' existing rate structure. Therefore,

the CTC was not expected to result in an increase in electricity rates from their current levels and was not to be viewed as an additional cost to consumers. If there were no transition to a competitive market, customers would continue to repay such costs to the utilities through their normal electricity bills.

The legislative debate concerning the CTC was highly contentious, because much was at stake financially for all stakeholders. Here, once again, the notion of the regulatory compact is relevant. The investor-owned utilities had to protect the interests of their shareholders and investors. The companies argued that past investments in plant and equipment were made in good faith to serve their customers. Moreover, because such investments were authorized by the commission, they, therefore, had a right to collect the cost of these investments from their customers. To do otherwise would not only defy one of the fundamental tenets of the regulatory compact, but would be tantamount to an unlawful "taking." Putting aside whether any of the investor-owned utilities' past investment were prudently incurred, the commission had a vested interest in finding a compromise solution in order to forge ahead with its restructuring program. The competition transition charge was a vehicle to maintain the utilities' financial well being and avoid litigation. Customer groups, in contrast, resisted the inclusion of the competition transition charge in future rates. The promise of lower bills would only be delayed, the longer the transition period lasted. They wanted an immediate rate reduction. Other market participants challenging the dominance of the investor-owned utilities to gain their own economic advantage also had a stake in the outcome of the CTC debate. Some stakeholders,

including irrigation districts, were even successful in winning exemptions from the CTC, which serves as a valuable illustration of how special interests can obtain preferential treatment through legislation. As with any highly contentious issue hashed out in the legislative process where competing interests are usually forced to compromise to avoid stalemate, the rules governing CTC collection were exceedingly complex, even by the arcane standards of utility ratemaking and accounting.

Rate Freeze & Rate Reduction

Utility rates for agricultural, residential, industrial, and large commercial customers were frozen at their June 1996 levels until the utilities recovered their generation-related uneconomic costs through the competitive transition charge.[59] Starting January 1, 1998, rates for residential and small commercial customers [60] were *reduced by ten percent* and were to remain at that level until the utilities recovered their generation-related uneconomic costs through the competitive transition charge. [61]

The rate reduction was meant to accomplish two political objectives: first, it was a concession, a not so subtle means of co-optation, given explicitly to the customer interest groups to gain their support for AB1890; and second, it was a public relations ploy on the part of the legislature to garner public support for the measure from their

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[59] Or until March 31, 2002, whichever came earlier.

[60] The definition of small commercial was 20 kilowatts or less of peak demand.

[61] Or until March 31, 2002, whichever came earlier.

constituents. The legislature was sensitive to public perception. Senator Peace and his committee members even went so far as to draft language, inserted into the final version of AB1890, that instructed the utilities how to design their rates and to specify the exact wording that would appear on customer bills.

In order to finance the ten percent rate reduction, the state issued "rate reduction bonds," which was essentially a means to give an immediate benefit to consumers by mortgaging their future. During this time, in the mid 1990s, Californians spent $23 billion annually on electricity. The legislature reasoned that a ten percent rate reduction, like a tax cut, would benefit consumers and the state's economy in the short-run, betting that competition in the marketplace would lower costs and yield additional economic benefits in the long-run.[62]

Funding Public Interest Programs

The restructuring legislation also established funding for public interest programs during the four-year transition period. The Energy Commission was given funding to support research, development, and demonstration projects for renewable energy technologies, environmentally preferred advanced generation, energy-related environmental research, end-use energy efficiency, and strategic energy research, administered through its Public Interest Energy Research Program (PIER) . Additional funding was given to the Energy Commission to support projects for

[62] The four-year, ten percent rate reduction was financed through the issuance of a $7 billion public bond that was to be repaid over ten years.

consumers and producers of renewable energy, such as wind, solar, geothermal, biomass, landfill gas, and small hydroelectric power.

The CPUC created the California Board for Energy Efficiency to lend further support for energy efficiency programs. The purpose of the newly created Board was to oversee the independent administration of energy efficiency programs designed to transform markets by: (1) providing cost-beneficial energy efficiency services to customers not normally served by markets, (2) offering customers meaningful information on the costs and benefits of energy efficiency measures, (3) reducing market barriers to investments in energy efficient products and services, and (4) creating a sustainable and competitive energy efficiency services market. [63]

Funding for public purpose programs was another step taken by the legislature to demonstrate that the public and society as a whole would benefit from restructuring. But, in reality, is was a political maneuver led by the large corporate consumer interests and a duplicitous legislature to "roll over" the environmental community. Energy journalist Arthur O'Donnell brilliantly captured this moment. He writes:

> "Just a month before AB 1890 was completed, bill author Brulte had boasted at an annual conference of the California Manufacturers Association, 'We're going to roll over the enviros....' Now pressure from liberal Senator Tom Hayden helped put into the bill as much as $540 million over four years to preserve and encourage new public-goods programs" (O'Donnell, 2003:25).

[63] See "Provisions of AB 1890," Professor Robert B. Laughlin, Department of Physics, Stanford University.

Implementation: Back to the CPUC

Nine months had now transpired between the CPUC's December 1995 Preferred Policy Decision and September 1996 when Governor Wilson signed AB 1890 into law. The market design was finally set. The commission's policy directive now had the legitimacy of state law. Meanwhile, the stakeholder working group coalitions that had been formed following the March 1996 Roadmap decision continued their detailed work to prepare for the market to open. California and the investor-owned utilities needed federal regulatory approval for the two new institutions necessary for the market to function because the power exchange and the independent system operator would fall under FERC jurisdiction. Moreover, the PX and ISO had to be created new out of whole cloth. Systems had to be designed; executives to manage and staff to operate the two new organizations needed to be hired; new institutional relationships among market participants were to be formed; time was needed for all parties to adapt to the new culture. In addition, numerous CPUC applications were being prepared by the three investor-owned utilities to carry out the commission's policies and the supporting legislation to implement direct access, to establish ratemaking mechanisms for the utilities to implement the rate freeze and rate reduction, and for the utilities to recover the costs of their stranded investments. One of most daunting tasks was to gain legislative approval for the state to float revenue bonds to finance the cost of the rate freeze and the ten percent rate reduction.

Work continued on all of these fronts at a feverish pace to ready the market. The commission originally envisioned phasing in direct access over a four-year period to

prevent customer demand from overwhelming the new market and trying new systems which were yet untested. However, the newly formed energy services companies were eager to enter the new direct access market, and they let their intentions be known . These companies -- such as Enron; PG&E Corporation's own marketing subsidiary, PG&E Energy Services; New Energy Ventures, a company started by a former President of Southern California Edison, Mike Peevey, who five years later was appointed to the CPUC; and out-of-state utility companies such as Constellation Energy, a subsidiary of Baltimore Gas and Electric; and Exelon, a subsidiary of Chicago's Commonwealth Edison -- were equipped with fully staffed business operations, and were prepared to begin marketing their services to gain access to the utilities' customers. They knew that the sooner the direct access market would open, the sooner they could launch their businesses to exploit the potentially lucrative California market. These energy service providers, especially Enron, were relentless in lobbying the legislature and the commission to pressure the utilities, the PX, and the ISO to speed up the process to complete their work on system design.

Their efforts were successful. Thus, the commission issued a unanimous decision on May 6, 1997, ruling that *all* consumers would be allowed to choose their electricity provider on January 1, 1998, three months ahead of schedule for large industrial and commercial energy users, and four years earlier than expected for residential and small business energy users. The next day, the San Francisco *Chronicle* published an article citing the commission's decision, with the headline

declaring, *"Electricity Monopoly Ends Jan. 1."* [64] Richard Mrlick, an executive of the Power Exchange, was quoted in the *Chronicle* article saying, "This is a homerun for consumers."

However, not everyone was sanguine about the accelerated schedule. P. Gregory Conlon, now the President of the CPUC, admitted that no one knew for sure how many customers would switch to new suppliers, but he expressed concern that "when the gun goes off, we won't be able to serve them." **[65]** He made this statement in spite of the fact that he voted with his fellow commissioners to go full speed ahead. S. David Freeman, who was appointed by Governor Wilson as trustee of the PX and ISO to coordinate the new market, confessed that "There is a possibility that we could be swamped and drowned by a rush of customers choosing new suppliers. This is a revolution we are conducting," but, he added, "such fears shouldn't be used to slow down consumers' right to choose. That's the whole ballgame." **[66]**

The Perfect Storm: The Restructured Market and Market Failure

April 1, 1998. This is the date the new power market in California actually commenced operation, three months behind the original start date. Choosing April Fool's Day was not meant to be a joke; nonetheless, the industry held its collective

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[64] "Electricity Monopoly Ends Jan. 1," *San Francisco Chronicle,* Wednesday, May 7, 1997.

[65] Ibid.

[66] Ibid.

breath and kept its fingers crossed hoping that systems would not fail.[67] Operational control of the power grid was turned over to the California Independent System Operator (CAISO). PX day-ahead prices and contracts were available through the New York Mercantile Exchange (NYMEX). Two years of planning and months of intensive and exhausting work finally came to fruition.

The first one hundred days of the new market functioned smoothly. Prices remained fairly stable and there were no major delivery hiccups from grid operations. However, beginning in July, prices began to spike when the demand for electricity reached near-all-time highs due to a prolonged heat wave throughout the state. The CAISO announced a state of emergency and ordered the utilities to call on their customer to voluntarily curtail use.

The CAISO had created a market monitor to watch over the functioning of the market, which now was to be guided by Adam Smith's "invisible hand," and to report anomalous behavior that might indicate evidence of market power abuse. Minor glitches in the computer and software systems not previously identified and ironed out in the rush to launch, coupled with an unfortunate convergence of events, conspired to expose flaws in the new market design. These flaws, minor at the time, foreshadowed events that would occur two years later, beginning in the Summer of 2000, in what became famously known as the California Energy Crisis.

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[67] Technically, the market opened on March 31,1998, because bids had to be submitted a day ahead to the PX and the ISO. However, commercial transactions commenced on April 1.

Much has been written in the academic and popular literature about the causes and consequences of the California Energy Crisis. Everything from supply shortages, to poor market design, to abandonment of regulation, to too much regulation, to market manipulation by Enron and other bad actors, mostly out-of-state generating companies, was to blame. One ludicrous account even accused California's liberal immigration policies, which led to overpopulation in the state, as the leading cause. Various scholars and industry analysts who have studied California's restructured electricity market from its conception and early development, through its formative stages, to its dysfunction and collapse, have given us the most credible accounts.[68] Blumstein, Friedman, and Green (2002) provide a useful history of electricity restructuring in California and summarize what various analysts believe to be the causes of the market failure. Most serious analysts, among them Weare (2003) and Cicchetti, et al. (2004), agree that flaws in the market design contributed to the failure. Sweeney (2002), for example, has provided a comprehensive analysis of the new market structure, how it operated, and what led to its failure. He has shown that changes in the supply and demand patterns throughout the Western United States, coupled with changes in electricity markets which produced volatility in wholesale prices, were largely to blame. These external factors, combined with the particular characteristics of California's market design, created, in his words, the "perfect storm." Jaskow (2000), like Sweeney, points to several "interdependent" factors,

[68] For an entertaining journalistic account of the market "meltdown" and the collapse of Enron, see Rebecca Smith and John R. Emshwiller (2003).

such as rising natural gas prices, a large increase in electricity demand in California, reduced imports from other states, rising prices in emission credits, and market power, that caused wholesale prices to rise and, thus, contributed to the failure of the restructured market.

These analysts give considerable weight to uncontrollable external *economic* factors, correctly so. However, flaws in the regulatory construct deserve equal consideration from a *political* perspective. Sweeney argues that the energy crisis grew out of two problems: one economic, i.e. short supply of electricity in the Western power market; and the other political, i.e. the state's ceaseless control over the utilities (Sweeney, 2002:83). Sweeny takes his argument a step further to explain that the "energy crisis" may be understood as two crises: a Western electricity crisis, and a financial crisis of the investor-owned utilities, which became a fiscal crisis for the state.

The design of the new market was a product of the political compromises forged by the various structural interests played out in the regulatory and legislative arenas. One feature of the grand bargain that the utilities bought into was to accept a freeze on retail rates. The ideology of markets led everyone to believe that loosening the regulatory grip on the monopoly utility and opening the market to competition would lead to lower electricity prices for consumers. Nobody was able to predict that the convergence of external forces would lead to a tighter market for wholesale power

and a sharp rise in wholesale prices. Population growth and increasing demand outpaced new generation capacity in California and throughout the West.

A fateful consequence of the rate freeze, now inscribed in law, was that the utilities were not allowed to pass through the high cost of wholesale electricity to customers by raising retail rates. The utilities were healthy enough financially to withstand a short-term uptick in wholesale prices, but the duration and magnitude of the price spikes, beginning in the summer of 2000 through year-end, caused serious strain on the utilities' available cash and credit to pay for electricity to serve their customers. Neither the commission, now led by Loretta Lynch, a staunch anti-utility, pro consumer advocate, nor Governor Gray Davis, who succeeded Pete Wilson, exercised the political will to authorize a rate increase, even on an emergency basis. When consumer prices spiked in the Spring of 2000 in San Diego, the commission did grant a modest rate increase for SDG&E in response to a mini consumer revolt led by San Diego's mayor and other local politicians. This act averted crisis in San Diego, but neither Commissioner Lynch nor Governor Davis were willing to follow suit to aid SCE and PG&E. Raising rates, in their minds, was politically infeasible and would be viewed by the public as capitulating to the mighty monopoly utilities. Only when SCE and PG&E were on the brink of financial insolvency did the commission authorize a small rate increase, but by that time it was too little, too late to prevent PG&E from seeking Chapter 11 bankruptcy protection.

PG&E sought shelter from its creditors by filing for Chapter 11 bankruptcy protection on April 6, 2001. PG&E's decision to file for bankruptcy protection was as much a political maneuver as a financial one. The company had tried, but failed, to work out a solution with Commission President Lynch and Governor Davis.[69] Neither party had the political will to raise customer rates, which would have given PG&E sufficient revenues to cover wholesale power costs and could have prevented PG&E from filing Chapter 11. PG&E's bankruptcy filing gave the governor and the commission an incentive to reach a settlement with SCE. They did not want to be blamed for causing two large utilities to declare bankruptcy. Upon hearing the news that SCE reached a deal with the commission, a PG&E executive remarked, "We pulled the ripcord and SCE's parachute opened." PG&E emerged from bankruptcy in April 2004, after paying its creditors $10.4 billion.

SCE avoided filing for bankruptcy protection by secretly working out a deal with the Lynch-led commission and its consumer advocacy branch on the heels of PG&E's bankruptcy filing. SCE's rate settlement with the commission did not prevent the company, however, from bringing suit against the commission in Federal District Court. The law suit alleged that the commission violated the "filed rate doctrine," a

[69] PG&E Corporation's bankruptcy filing was accompanied by a Plan of Reorganization, which proposed to remove some operating divisions of the company, under CPUC regulation, and place them under federal-level regulatory control by the FERC. The Plan, had it succeeded, would have resulted in PG&E becoming a "pipes and wires" gas and electric distribution company. Its gas and electric transmission divisions and other operations would have devolved to FERC regulation. Commissioner Lynch accused PG&E and its reorganization plan of attempting a regulatory "jail break." Those in the utility camp found it ironic that Lynch's choice of words likened regulation to a jail term.

common law principle which provides that any entity that is required to file tariffs governing the rates, terms, and conditions of service must adhere strictly to those terms. The filed rate doctrine forbids a regulated entity from charging a rate other the one on file with the appropriate federal regulatory authority, in this case the FERC. The flip side of the rule, SCE argued, required the CPUC to set retail rates at a level sufficient to allow the company to recovery the full cost of wholesale power procured on behalf its customers, per its filed tariffs. The commission decided to work out a solution for SCE rather than defend the lawsuit. The deal between SCE and the commission allowed the company to maintain higher than necessary rates until the high power costs were recovered. The consumer advocacy organization, TURN, sued the commission arguing that the deal with SCE violated the rate freeze provision of California's restructuring law, AB1890. The lawsuit went to the U. S. Ninth Circuit Court of Appeals and to the California Supreme Court before ultimately being dismissed.

In conclusion, flaws in the regulatory regime deserve part of the blame for failing to avert the crisis. Yet another important factor, also a byproduct of the commission's rules, was that the utilities were precluded from signing long-term contracts for power. Reliance on the spot market exposed the utilities to price volatility. These constraints were exacerbated by the commission's reluctance to allow the utilities to use financial instruments to hedge their positions. It became clear that for all of the talk about liberalizing regulatory control over the utilities, the commission still

exercised enormous power over key economic decisions that prevented management from taking prudent steps to avert a financial crisis.

The Aftermath of the Crisis

The California Energy Crisis was clearly disruptive. It posed grave danger to the utilities, which, for a time, teetered on the precipice of financial ruin. Customers suffered through a calamitous series of service interruptions, rolling blackouts, and steep rate hikes. It damaged the reputations of many of the state's political leaders. Senator Peace, the one credited with being the driving force behind the reform movement in the legislature, had his reputation tarnished and his political career derailed. The calamity prevented him from seeking a run for the office of California Secretary of State and potentially for the governor's office. He managed to survive temporarily and to hold on to his senate seat to serve out his term in the state legislature before term limits forced him out of office. Peace never accepted responsibility for the legislation he sponsored. He even tried to prove that he opposed many of the provisions that ended up in the final bill. Instead, he assigned blame to market manipulation by Enron and to the greed of out-of-state generators. Peace left the public stage and resumed his career producing 'B' movies, most notably sequels to his earlier film, *Attack of the Killer Tomatoes*. Assembly member Brulte, whose name is attached to the fateful piece of legislation, AB 1890, managed to distance himself from the bill. He continued to serve in the legislature, and emerged as a leader of his party. He still serves as Chair of the California Republican Party and has received some notoriety among moderate Republicans nationwide. The crisis

spelled the end of Governor Gray Davis's political career. During his run for a second term, campaign bumper stickers around the state read, *"Blackouts 2001, Gray Out 2002!"* Only a few months into his second term, Davis was recalled from office and Republican Arnold Schwarzenegger was elected to replace him as governor.

A crisis is not only disruptive and dangerous; it is also transformative and can sometimes open new opportunities. One consequence of the California Energy Crisis was the erosion of public confidence in the institutions of government and deepening distrust of the utilities. The consumer organizations and other challenging interests were all to pleased to see the blame being pinned on those two institutions. The regulators, too, were caught in the cross hairs, but they found an opportunity to seize control and assume a leadership position in the political vacuum. The energy crisis made plain the need for the institutions of government to stabilize and restore order in the market and to guide future energy policy. The next chapter will explore how the regulators used their institutional position of power to set the policy agenda largely on their own terms, and how they found new ways to use the regulated entities, primarily the utilities but also to now the other load serving entities under their control, as the chief instrument to carry out their policy directives.

CHAPTER SIX

CHARTING A PATH FORWARD: THE ENERGY ACTION PLAN AND COMBATING GLOBAL CLIMATE CHANGE

Chapter 3 traced the history of federal energy legislation. It argued that the Arab Oil Embargo and the nation's energy crisis in the mid 1970s resulted in the enactment of major legislative initiatives -- the Public Utility Regulatory Policy Act in 1978 and the Energy Policy Acts of 1992 and 2005 -- which launched a new era in energy regulation by introducing competition in the energy marketplace. These federal-level initiatives and the state-level policy initiatives that followed contributed to undermining longstanding tenets of the regulatory compact, and ushered in a political movement that fundamentally altered the regulator-regulated relationship. Chapters 4 and 5 explained how California responded to these federal-level initiatives by establishing regulatory policies and programs to implement the provisions of PURPA and EPAct, and how the various structural interests -- utilities; consumer groups, large and small; independent power producers; direct access providers; marketers -- seized the opportunity either to advance their own economic and political interests or block the efforts of competing interests through the regulatory and legislative processes.

This chapter continues the narrative and the analysis by documenting the evolution of California's progressive energy policies by introducing the Energy Action Plan and

focusing on two of its policy initiatives: *promoting energy efficiency* and *advancing renewable energy development*. California's Energy Action Plan is presented by first placing it in the political context of the time. The introduction of the Energy Action Plan, in 2003, marked a watershed moment in the evolution of California's energy policy, in that it represented a radical shift in the manner in which public policy in the energy sector would now be deployed. The political vacuum created by the California Energy Crisis provided a unique opportunity for the regulators to intervene in the political-regulatory process, enabling them to use their institutional position of power to drive the policy agenda. The regulator-regulated relationship, as it evolved, provides an illustration best characterized by the classic public policy problem of *agency*, a subject that will be explored toward the end of this chapter.

Following the lead taken by the regulators through the policy directives contained in the Energy Action Plan, the state's political leaders followed suit by introducing new legislation to strengthen the mandates of the Energy Action Plan and to advance energy policy by introducing measures to address global climate change. Climate change and environmentalism, thus became the new centerpiece of the energy policy agenda. The chapter, then, closes by pointing toward the future, posing the question: how can the evolving energy market and the regulatory regime adapt to address issues of price affordability, energy reliability, and *"decarbonization"* of the economy, while avoiding the mistakes of the past and precipitating another crisis?

Restoring Order & Stability - New Institutional Arrangements

In his State of the State Address, on January 8, 2001, Governor Gray Davis, speaking on the matter of energy, declared that

> "California's deregulation scheme is a colossal and dangerous failure. It has not lowered consumer prices. And it has not increased supply. In fact, it has resulted in skyrocketing prices, price-gouging and unreliable supply of electricity. In short, an energy nightmare....We will regain control over the power that's generated in California and commit it to the public good." [70]

Governor Davis vowed to work with the legislature to meet this challenge and went so far as to threaten to use the state's power of eminent domain to seize control of the power plants that the utilities had sold to out-of-state generating companies. Thus, the California Consumer Power and Conservation Financing Authority [71] was born out of Governor Davis's plea to the legislature at the height of the energy crisis.

The Power Authority, for short, was not merely just another run-of-the-mill bureaucratic state agency. It represented an explicit, even radical, move to turn California in to a public power state, and, potentially, to *socialize* the production of power. S. David Freeman was appointed to head the new agency. Freeman had a long and storied career in the energy industry serving two U. S. Presidents. Lyndon Johnson appointed Freeman to be his first energy advisor. Later, Jimmy Carter appointed Freeman Chairman of the Tennessee Valley Authority. During his career, Freeman served as CEO of the Lower Colorado River Authority, the New York

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[70] California Governor Gray Davis, "State of the State Address," January 8, 2001.

[71] The California Consumer Power and Conservation Financing Authority was created by an act of the legislature in Senate Bill X-16, on May 16, 2001.

Power Authority, the Sacramento Municipal Utility District, and the Los Angeles Department of Water and Power. He also served as the trustee of the incipient Independent System Operator and the Power Exchange during their initial formation prior to start up. He was subsequently chosen by Governor Davis to help solve California's energy crisis.

The Power Authority was given broad powers to construct new generating facilities and to acquire existing facilities by exercising its right of eminent domain. It was given authority to raise up to $5 billion by issuing revenue bonds to finance the construction of power plants and to invest in energy conservation programs. Its grand ambitions were never realized as California and its host of vested interests were not willing to take the state down a socialist path. The legislation that created the Power Authority contained a sunset provision. Thus, the Power Authority was not granted funding in the state budget and it ceased to operate on January 1, 2007. Nevertheless, during its short life span, it was welcomed as the junior partner to the more venerable and well established CEC and CPUC, and it participated fully in the creation of the first of two Energy Action Plans.

The Energy Action Plan

The California Electricity Crisis in 2000-2001 made plain the need for the institutions of government to restore order in the marketplace and to reestablish the public's confidence in government. The crisis also illustrated how further erosion of the regulatory compact provided a unique opportunity for the regulators to assert their

leadership role to guide future energy policy. Seizing the opportunity to restore order and stabilize the market in the aftermath of the energy crisis, and to fill a leadership void created by a weak executive and a legislature in retreat, the state's three principal energy agencies -- the CPUC, the CEC, and the newly formed Power Authority -- came together in a unique cooperative engagement to create a blueprint to guide future energy policy development and implementation.

Thus, in 2003, in the aftermath of the energy crisis, once the dust had settled, the state's energy agencies approved an Energy Action Plan (EAP) for California, that was touted as a "first-of-its-kind" in the nation. The Energy Action Plan was intended to be a policy blueprint to focus efforts and to guide action. Its statement of purpose reads a follows:

> "California's economic prosperity and quality of life are increasingly reliant upon dependable, high quality, and reasonably priced energy. Following the biggest electricity and natural gas crisis in its history, the state is well aware of the need for stable energy markets, reliable electricity and natural gas supplies, and adequate transmission systems. Looking forward, it is imperative that California have reasonably priced and environmentally sensitive energy resources to support economic growth and attract the new investment that will provide jobs and prosperity throughout the state. California's principal energy agencies have joined to create an Energy Action Plan. It identifies specific goals and actions to eliminate energy outages and excessive price spikes in electricity or natural gas. These initiatives will send a signal to the market that California is a good place to do business and that investments in the more efficient use of energy and new electricity and natural gas infrastructure will be rewarded. This approach recognizes that California currently has a hybrid energy market and that state policies can capture the best features of a vigorous, competitive wholesale energy market and renewed, positive regulation. This approach will be ever mindful of the need to keep energy rates affordable, and is sensitive to the implications of energy

> policy on global climate change and the environment generally" (Energy Action Plan 2003:1). [72]

The Energy Action Plan initially grew out of a series of informal discussions initiated by Michael Peevey, President of the Public Utilities Commission, and two close associates in liberal Democratic and policy circles: Sunne Wright McPeak and Don Vial. Sunne McPeak was, at that time, Vice-chair of the Power Authority, and Don Vial was one of its board members. Prior to her appointment, McPeak served in local government as a member of the Contra Costa County Board of Supervisors. She also served as President and CEO of the Association of Bay Area Governments, the Bay Area Economic Forum, and the Bay Area Council, the latter of which is a public-private partnership organization, dominated by the Bay Area's largest corporations. The Council focuses on regional and statewide economic and public policy issues. After leaving the Power Authority, McPeak served as Cabinet Secretary of the California Business, Transportation and Housing Agency under Governor Jerry Brown, who later appointed her President and CEO of the California Emerging Technology Fund (CETF), a statewide nonprofit organization whose mission is to close the "digital divide" by accelerating the deployment and adoption of broadband technology.

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[72] The Energy Action Plan was formally adopted separately by each of the three agencies. The Power Authority adopted the Plan on April 18, 2003; the CEC on April 30, 2003, both unanimously. The CPUC adopted the Plan on May 8, 2003, by a 3-2 vote. Commissioners Loretta Lynch and Carl Wood issued a written dissent, dated May 12, 2003.

Don Vial, likewise, had a distinguished career in government and the private sector. A labor economist by training and profession, Vial served as director of the California Department of Industrial Relations and as a member of the California Public Utilities Commission. He founded and served as President of the California Foundation on the Environment and the Economy (CFEE), a nonprofit organization whose stated mission is to is "to bring together leadership from the business, labor, community and environmental sectors with elected and appointed officials in roundtable forums concerning the fundamental environmental and economic infrastructure issues in California." [73] Don Vial was a mentor to Mike Peevey, who followed in Vial's footsteps throughout his career, first to CFEE and eventually onto the CPUC. Peevey, McPeak, and Vial initiated the discussions, but soon invited Bill Keese, a moderate Republican who was at that time chair of the Energy Commission, to join them.

Formal adoption of the Energy Action Plan was non-controversial at the Energy Commission and the Power Authority; both agencies endorsed the Plan with a unanimous vote. However, the Plan stumbled out of the box at the CPUC. By this time, all five commissioners were Democrats, appointed by Governor Davis. But party affiliation would belie a deep ideological divide within the commission. On one side were President Peevey, Susan Kennedy, and Geoffrey Brown. They constituted the majority over Commissioners Loretta Lynch and Carl Wood. Lynch and Wood were staunch consumer advocates and strongly favored strict regulation. Throughout

[73] Source: California Foundation on the Environment and the Economy website.

their tenure on the commission, Lynch and Wood's pro-consumer, anti-corporate bias was evident in their voting records. Their politics were to the left of the other three liberal Democrats, who took a more pragmatic and less ideological approach to the job of utility regulation.

Susan Kennedy (no relation to the famous political family) was a long-time Democratic Party loyalist. She was drawn into politics in the late 1970s through Tom Hayden's Campaign for Economic Democracy. Her work with liberal advocacy groups led to the executive directorship of the California Democratic Party. In the early 1990s, she worked on the successful senatorial campaigns of both Dianne Feinstein and Barbara Boxer, and later became Senator Feinstein's communications director. Her campaign work helped Gray Davis, then the state's Lieutenant Governor, win the 1999 gubernatorial race against conservative Republican State Attorney General Dan Lungren. While serving as Governor Davis's chief of staff, Kennedy was appointed ("sentenced," she likes to joke) to the Public Utilities Commission on January 1, 2003. While serving on the commission, Kennedy earned a reputation as a pragmatist who could get things done.

Joining Peevey and Kennedy was Geoffrey Brown, a member of California's esteemed political family, a nephew of Governor Pat Brown and a cousin of Governor Jerry Brown. Immediately prior to his appointment to the commission, on January 1, 2003, Brown was the City of San Francisco's elected Public Defender, a position he held since 1978, being re-elected five consecutive times. During his tenure on the

commission, Brown was often the swing vote on various issues, but usually joined the majority bloc with Peevey and Kennedy

Loretta Lynch was a partner in the San Francisco litigation firm Keker & Van Nest before entering public service. Like her commission colleague Susan Kennedy, Loretta Lynch worked on numerous Democratic political campaigns, including John Van de Kamp's unsuccessful gubernatorial campaign in 1990, Bill Clinton's 1992 presidential campaign, Diane Feinstein's 1992 senatorial campaign, and Gray Davis's successful gubernatorial campaign in 1998. Prior to her appointment to the commission, Lynch served in Governor Davis's administration as Director of the Office of Planning and Research. Governor Davis appointed Lynch to the commission in 2000, during the midst of the Energy Crisis. She served as commission president from 2000 through 2002, at which time Mike Peevey succeeded her as president.

Carl Wood was a utility worker and union leader. He was a business agent of the Utility Workers Union of America, representing power plant employees of the Southern California Edison Company. He was appointed to the commission by Governor Davis in May 1999.

When the Energy Action Plan was presented to the full commission for consideration, Wood and Lynch voted against adoption, but lost on a 3-2 vote. They expressed their concerns by filing a formal, written dissent.

> "Our focus is on consumers. The Plan's focus is on competition. We want stability, predictability, consumer protection, low prices, environmental preservation, and regulatory fairness. The Plan talks about markets....Where one stands on these issues makes all of the difference when answering fundamental questions about energy planning and service. Someone who looks at an inkblot and sees markets will argue for higher reserve margins and redundant transmission facilities -- adding billions of dollars in cost. One who looks at the same image and sees the face of a consumer will be searching for ways to keep costs low and stable, make supplies efficiently reliable, and support integrated planning and least-cost dispatch. It is this fundamental difference that drives the debate about such things as transmission adequacy and ISO rule changes." [74]

In voting against the Plan in its current form, Wood and Lynch asserted that the commission cannot "skirt around pending proceedings to create new programs, set reserve margins or declare that certain new facilities are needed. To do so would be unfair. It would breed cynicism and it would violate the law." [75]

The Energy Action Plan, nevertheless, now had the support of the state's principal energy agencies over the objection of two renegade CPUC commissioners. The three agencies joined together in a unique cooperative engagement to create a blueprint and an action plan to guide future policy development and implementation.[76] The Energy Action Plan was clearly a product of a cooperative effort, but cooperation was not

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[74] Source: CPUC Website. Commissioners Loretta Lynch and Carl Wood, written dissent, dated May 12, 2003.

[75] Ibid.

[76] The first joint meeting of the Energy Action Plan was held on March 11, 2003. All five CEC Commissioners attended: Chairman William J. Keese, James Boyd John L. Geesman, Robert Pernell, and Arthur H. Rosenfeld. The Power Authority was represented by Chairman David Freeman; Barbara Lloyd on behalf of State Treasurer, Phil Angelides; Sunne McPeak; and Donald Vial. The CPUC was represented by President Michael Peevey, Susan Kennedy, Loretta Lynch, and Carl Wood. Also in attendance was Richard Katz, Senior Advisor, Office of Governor Gray Davis.

always the modus operandi among the state's energy agencies. Historically, the CEC and the CPUC had a long history of working independent of one another, often in conflict and at loggerheads over which agency was primary and the driving force to lead the state in energy policy. Quarrels between the CPUC and the CEC led to threats from Sacramento, from time to time, to reorganize the two energy agencies. Mostly, however, these were merely idle threats. The CPUC's status as a constitutional agency gave it a measure of protection from the whims of the executive and legislative branches of government. In fact, when the CPUC was created, in 1911, it was deliberately placed in San Francisco, away from Sacramento, to enable it to maintain its political independence and, specifically, to prevent the legislature from meddling in its affairs. This privileged status gave the CPUC commissioners and staff an attitude of arrogance and air of superiority.

The CEC does not have the same privileged status as the CPUC. It was created through legislation and its charter could always be amended by new legislation. However, because the CEC is a branch of the larger state Resources Agency and is woven into the fabric of state government, it enjoys more than a modicum of safety from the threat extinction. The most recent attempt at reorganization, up to that time, occurred in 1995, when then-Governor Pete Wilson proposed a reorganization plan to eliminate the Energy Commission and transfer all existing divisions and functions of the Energy Commission and the Department of Conservation to a newly created Department of Energy and Conservation. Wilson's reorganization plan was part of a larger attempt on his part to reign in the state's independent boards and commissions

and place them under more direct control of the executive branch. The Little Hoover Commission rejected legislative action, thus ending Governor Wilson's reorganization plan.

In the post-Energy Crisis era, the legislature, too, recognized the relevance of the CEC as a planning agency. Thus, in 2002, the state senate passed Senate Bill1389, a post energy crisis measure, which further empowered the Energy Commission by giving it new responsibilities to study and report to the governor and the legislature the status of the state's energy affairs.[77] The CEC's work culminates in a biennial "Integrated Energy Policy Report" (IEPR), which serves as a potential source of new energy legislation. The energy crisis and institutional pressures provided the political motivation for the CEC and the CPUC to reach détente and to begin a cooperative enterprise. Nevertheless, when Arnold Schwarzenegger assumed the governorship, in November 2003, he came to Sacramento proclaiming he would "blow up the boxes" of state government. The two agencies now had to take seriously the threat of reorganization or extinction.

The Threat of Reorganization

Under the California constitution, the governor has the authority to examine the organization of executive branch agencies and determine whether changes may be necessary to promote more efficient and effective government. The reorganization

[77] Senate Bill 1389, authored by State Senator Debra Bowen, amended the planning and forecasting provisions of the existing 1974Warren-Alquist Act and required the CEC to prepare an Integrated Energy Policy Report.

process can be used to consolidate, transfer, or abolish programs and agencies, or to create new ones. California has a standing "Little Hoover Commission," whose role is to evaluate state government to assist the governor and legislature by offering recommendations to reorganize agencies either through administrative action or legislation.

California's Little Hoover Commission's formal name is the "Milton Marks 'Little Hoover' Commission on California State Government Organization and Economy." It is an independent state oversight agency, created in 1962,

> "to investigate state government operations and policy, and – through reports and legislative proposals – make recommendations to the Governor and Legislature to promote economy, efficiency and improved service in state operations. In addition, the Commission has a statutory obligation to review and make recommendations on all proposed government reorganization plans." [78]

California's "Little Hoover Commission" is modeled after the federal government's Hoover Commission, which was established during the Truman administration. President Truman's Hoover Commission was but one of several efforts by the federal government to reorganize itself.

Government reorganization can trace its roots historically to post-Civil War Congressional-sponsored investigations into departmental management "to promote economy through the introduction of improved working methods" (Polenberg, 1966:3). The Dockery-Cockrell Committee (1883) was the first comprehensive Congressional investigation into administration. Modern attempts to reorganize

[78] Source: Little Hoover Commission website.

government began in the early part of the twentieth century. Theodore Roosevelt, in 1905, appointed the Keep Commission to study department procedures. President Taft used the Commission on Economy and Efficiency (1910-1913) to create the first federal budget and to study administrative reform. As its name implies, the impetus for the commission was influenced by the work of Frederick Taylor, whose theory of "scientific management," it was thought, could be applied to government to make it operate more efficiently and business-like. Decades later, Franklin Roosevelt, in 1937, created the President's Committee on Administrative Management, known as the Brownlow Commission. Recommendations adopted by the Brownlow Commission led to sweeping reforms of the federal bureaucracy, most notably resulting in the creation of the Executive Office of the President, sowing the seeds of the modern "Imperial Presidency." Roosevelt used the Brownlow Commission and its recommendations, embodied in the Reorganization Act of 1939, not only to consolidate executive power within the Office of the President, but to justify the creation and expansion of administrative agencies to foster the New Deal. Truman's Hoover Commission was established after WW II to study the organization of federal agencies, which had proliferated during the New Deal. The Hoover Commission produced a series of reports and a set of recommendations to Congress to abolish, consolidate, and reorganize administrative agencies and to streamline government in the name of efficiency. The work of the Hoover Commission resulted in the Reorganization Act of 1949, which was signed into law by President Truman.

Virtually every president, no matter what political stripe, famously comes into office proclaiming the need to streamline government, to make it more responsive, or, in the extreme, to abolish it. Nixon had his Ash Council; Obama, the Office of Information and Regulatory Affairs, headed by Harvard Law Professor Cass Sunstein. Each and every federal commission created to reform government is a tool that the executive uses to carry out certain political objectives. California's Little Hoover Commission is no exception. Now, with the Little Hoover Commission poised to examine the organization and autonomy of California's energy agencies, the CEC and the CPUC were put on notice and that their quarrelsome behavior had to cease. Reorganization was perceived as an existential threat by the two agencies.

An Energy Czar?

Governor Schwarzenegger announced his intention to establish a cabinet-level Department of Energy by consolidating the functions of government that implement the state's energy programs. His reorganization plan was laid out in a 2005 report under the rubric of his hope-to-be Department of Energy titled, "*A Vision for California's Energy Future*." Schwarzenegger governed much like the action figure he portrayed in the movies. Aside from his desire to "blow up the boxes," Schwarzenegger was motivated to reorganize the energy agencies because of his frustration with the pace of the CEC and, particularly, the CPUC following through on the initiatives outlined in their Energy Action Plan. Schwarzenegger was not patient when it came to the practice of government.

A Vision for California's Energy Future concluded that the energy crisis brought to light the institutional fragmentation that often resulted in fragmented polices.[79] In a 2003 study, the Public Policy Institute of California, a "nonprofit, nonpartisan think tank dedicated to informing and improving public policy in California through independent, objective, nonpartisan research," likewise, concluded that the state's energy policies lacked coherence and clarity due to overlapping responsibilities, inefficiencies, and conflict between the agencies.[80] Furthermore, a separate report issued by the Bay Area Economic Forum, reflecting on the events of the energy crisis, noted that:

> "Despite the wake-up call delivered by the energy crisis of 2000-2001, the state still does not have a clear and well-integrated power policy in place. Instead, the state has a complex patchwork of different agencies -- each making critical decisions regarding the power industry -- without a common vision or philosophy." [81]

Hence, the rationale for creating a single Department of Energy was "to permit the State to set strategic direction for California's future energy needs, sharpen policy development and program implementation, and eliminate duplication of effort," [82] and to establish a cabinet-level department as a single point of accountability directly to the governor.

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[79] *A Vision for California's Energy Future,* p. 3.

[80] "What Can be Learned from California's Electricity Crisis?" Research Brief, Public Policy Institute of California, Issue 66, January 2003.

[81] "California's Energy Future: A Framework for an Integrated Power Policy," Bay Area Economic Forum, November 2002.

[82] *A Vision for California's Energy Future,* p. 4.

Governor Schwarzenegger's plan, however, ultimately failed on several counts, not the least of which was the realization that blowing up boxes or moving them around would not succeed in solving underlying problems; it would probably not only exacerbate the same old problems, but might likely create new ones. Moreover, the governor underestimated the power of vested institutional and political interests that had a stake in preserving the status quo. The plan to create a Department of Energy could not overcome the barrier of the CPUC's status as a constitutional agency. Transferring certain functions, such as transmission planning and siting, energy policy analysis, and program management, from the CPUC to the CEC would not require an amendment to the constitution or an act of the legislature. Nevertheless, no elegant solution could be found that might not undermine the CPUC's statutory economic rate setting authority. In fact, the most the reorganization plan could do was to leave the CPUC's rate setting and economic functions intact, thus defeating a major purpose for consolidating the energy agencies.

The plan was awkwardly designed at the outset from both bureaucratic and governance perspectives. According to the governor's design, the Energy Commission was to report directly to the cabinet-level Secretary of Energy. The Energy Commission would exist more or less as presently constituted, but now with the President of the CPUC and the CEO of the CAISO sitting as ex-officio members. It was unclear what role these two ex-officio members would play in policy formation and decision making. Reorganizing agencies is an extreme measure to take if the objective is to create the conditions for better communication and coordination. In

addition, there was no reciprocal arrangement for the chair of the Energy Commission to occupy a place in the CPUC's management and decision making structure. The CPUC's special status as a constitutional agency protected it from undue influence by the executive branch. Finally, the role of the CAISO CEO was equally problematic from a governance perspective. The CAISO is not a state agency. It is an independent public benefit corporation under the exclusive jurisdiction of the FERC. The new Department of Energy, not so cleverly, revealed the governor's intent to usurp the CAISO's market monitoring function by transferring the state's Electricity Oversight Board (EOB) to the new Department of Energy.

The Electricity Oversight Board was established by the California Legislature, in 1996, as part of the restructuring measure, AB 1890. The legislature had difficulty reckoning with the fact that a restructured electricity market meant that the state's regulatory control would diminish. Regulatory authority over the two new institutions, the CAISO and the PX, would devolve to the FERC. Unwilling to cede total control to the federal government, the legislature created the Electricity Oversight Board to ensure that wholesale energy markets and the electric transmission system functioned reliably and provided electricity at fair costs to California's consumers and businesses. [83]

[83] The Electricity Oversight Board's primary means of pursuing these goals was to monitor electricity markets in order to guard against price manipulation by electricity producers, and to pursue refunds of alleged overcharges during the energy crisis. Other entities have assumed the major responsibilities related to the activities assigned to the Electricity Oversight Board's. The California Independent System

The proposed Department of Energy also failed for political reasons. Critics correctly saw the creation of the Department of Energy as a power play on the part of the governor to abolish the independence of the energy agencies and to seize control of energy policy for the state. Governor Schwarzenegger made no secret that he intended to name Joe Desmond, at that time the Chair of the Energy Commission, as the new Secretary of Energy. This potential appointment did not sit well with many of the state's elected officials, who were suspicious of the governor's motives and feared that their respective roles in energy policy formation and oversight of the CPUC and CEC would be diminished. Certain legislators who respected the work of the Energy Commission saw virtue in maintaining its independence. After all, recent legislation breathed new life into the Energy Commission by giving it a larger role in policy matters than it previously enjoyed. Aside from the CEC's responsibility to produce the biennial Integrated Energy Policy Report, Assembly Bill 1890 transferred utility R&D funding from the investor-owned utilities to the CEC to better coordinate programs statewide. In addition, the CEC always had strong support for its leading role nationwide in developing building and appliance standards and for funding innovative energy efficiency and RD&D programs. For a time, its power plant licensing function had become dormant. No new power plants had been on the drawing board for many years when California and its neighboring states enjoyed

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Operator has extensive procedures for market oversight, and the California Public Utilities Commission has intervened at the Federal Energy Regulatory Commission and in the courts to pursue refunds due to overcharges. In view of these developments, the continued operation of the Electricity Oversight Board was no longer necessary, and the EOB ceased operations on April 1, 2008. Source: California Department of Finance, Governor's 2009-2010 budget detail.

sufficient generating capacity. It wasn't until the energy crisis that the state woke up to the realization that the oversupply conditions had vanished, and that the wholesale electricity market in the West had tightened. The Energy Commission now had a renewed purpose to license new power plants.

The governor's reorganization plan was also unpopular with the industry in general. Some of the utilities saw improvements in the recommendation to consolidate transmission permitting and siting in the CEC, which had a better track record than the CPUC in terms of reaching decisions on a timely basis. The CPUC's intervenor compensation program, critics believed, invited public participation to an excess, and argued that it was a major cause of the commission's inability to reach timely decisions on transmission siting cases. PG&E, during this time, had two large transmission upgrade projects that it was desperate to complete to improve reliability to its system and to meet growing customer demand. In addition, SDG&E was eager to build a new transmission project, Valley Rainbow,[84] which was vital for the company to meet projected demands for electricity in San Diego and Southern Orange Counties. Delays with these projects not only reinforced the utility industry's growing belief about the ineffectiveness of the CPUC to reach timely decisions, but it raised question in the minds of utility executives about the scope of CPUC's authority.

[84] San Diego Gas and Electric Company submitted an application to the CPUC for the Valley-Rainbow 500 kV Interconnect Project on March 23, 2001.

PG&E's Tri Valley Project [85] was needed to support rapid population and economic growth in the Amador, Livermore, and San Ramon Valleys, east of San Francisco and Oakland. The company's Jefferson-Martin transmission line [86] was needed to serve the growing demands for electricity and power quality for the high tech business community in Silicon Valley, and it was crucial to enable PG&E to shut down the Hunters Point Power Plant. Hunters Point, which was built in 1929, was one of the oldest and dirtiest power plants in the state, and was a major source of pollution. The plant was located directly across the street from public housing in one of San Francisco's poorest neighborhoods, populated predominantly by African-Americans and other racial minorities. The power plant, along with other heavy industry in the vicinity, was alleged to be the cause of a disproportionate incidence of asthma and cancer cases in the area. Residents and community activists pushed to have the plant shut down. PG&E's Hunters Point Power Plant and neighboring Potrero Generating Station [87] were the only sources of in-city electricity generation.

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[85] Pacific Gas and Electric Company submitted an application to the CPUC for the Tri Valley Capacity Increase Project on November 22, 1999. The Tri-Valley Project was approved by CPUC (Decision 01-10-029) on October 10, 2001, and construction began in September 2002.

[86] Pacific Gas and Electric Company submitted an application to the CPUC for the Jefferson-Martin 230 kV Transmission Project on September 30, 2002. The project was approved by the CPUC on August 19, 2004 (Decision D.04-08-046). Construction of the PG&E Jefferson-Martin Project was completed in August 2006.

[87] The Potrero Power Plant was originally the site of a manufactured gas plant facility in the late nineteenth century. A small electric generator was constructed at the site circa 1890. Unit 3 was constructed in 1965; and peaking units 4, 5, and 6 were constructed in 1976. The plant was closed on December 31, 2010, after the Trans Bay Cable Transmission Project went into service in November 2010. The Trans Bay

Alternative sources of power supply were needed before either of these plants could be shut down. Grass roots community pressure was crucial in the fight to close the Hunter Point Power Plant, and PG&E was sympathetic to the cause of social justice. In 1998, the City of San Francisco entered into an agreement with PG&E to shut down the plant as soon as the facility was no longer needed to sustain electric reliability in San Francisco and the surrounding area.

Politically powerful high tech firms in Silicon Valley, were equally frustrated with the CPUC's slow pace in completing its economic evaluation and environmental review to approve both the Tri Valley and Jefferson-Martin transmission projects. Silicon Valley customers complained to PG&E, but the commission was indifferent to pleas by the utility to speed up the process. Powerful business interests, such as the Bay Area Council and the Silicon Valley Leadership Group, took their cause to the state capitol. In no small way, the success of their lobbying efforts was one of the factors that led Governor Schwarzenegger to call for energy agency reorganization. SDG&E's Valley Rainbow Project has a similar story. Political pressure by a broad-based coalition of business leaders, labor unions, statewide industry trade associations, elected officials, and private individuals was needed to induce the CPUC to act. Organized labor, led by the influential International Brotherhood of Electrical Workers eager for jobs, also pressured Sacramento.

Cable Transmission Project, which connects to electricity supply in the East Bay City of Pittsburg, delivers approximately sixty percent of San Francisco's power supply and forty percent of its peak demand.

In spite of their frustrations with the CPUC, the utility community quietly opposed the governor's reorganization plan and the transfer of responsibilities from the CPUC to the CEC. The status quo was a safer route to adhere to because the utilities preferred "to deal with the devil we know," as one utility executive admitted. The same held true for the disadvantaged interests and the NGOs. The energy efficiency community, including the utilities, environmental organizations, and energy service companies, also preferred to maintain the status quo. Opposition to the reorganization plan was led by the NRDC, which apart from the utilities themselves, was the single most influential party in all matters related to energy efficiency. Collectively, these interest groups knew how the bureaucratic energy efficiency game was played -- how the money was doled out to appease everyone to one degree or another. They calculated that it was unwise to disrupt the system when parties could count on receiving their share of the benefits pie. Money can be used as a powerful tool to quell dissent and to co-opt compliance. No one in the energy efficiency community found the reorganization plan a means to open new opportunities or to gain further political or economic advantage. They opted for the status quo.

Finally, personality, as much as politics, was a reason for dealing a fatal blow to the governor's reorganization plan. Though some marveled at his ability to get things done and to advance progressive policies, especially on energy and environmental matters, Schwarzenegger was still an outsider in the bubble of Sacramento politics, and therefore not trusted by entrenched political interests. Early in his administration Schwarzenegger promoted a pro corporate agenda taking aim at the state's labor

unions, which he blamed for everything from political gridlock to the state's budget deficit. His plans to reduce the state budget and reform the public pension system ultimately failed when confronted by opposition from the powerful public employee unions -- the California Nurses Association (CNA), the California Teachers Association (CTA), the Association of Federal State County and Municipal Employees Association (AFSME), and the Service Employees International Union (SEIU). Schwarzenegger also faced the threat of a recall organized by the state's prison guards and their powerful union, the California Correctional Peace Officers Association, when he played hardball during negotiations over a hard fought labor contract extension.

Key members of the legislature were opposed to any erosion of their utility industry oversight authority. Both houses of the state legislature have standing committees -- currently named the Assembly Committee on Utilities and Energy and the Senate Energy, Utilities, and Communication Committee -- which oversee the affairs of the CPUC and the CEC. Members were unwilling to have their control diminished by a cabinet-level secretary accountable directly to the governor.

Finally, the commissioners at the two affected agencies were not enamored with idea that the independence and the authority of their respective agencies would be diminished, nor with the proposition that their personal positions in the bureaucratic pecking order would be usurped by an "energy czar." Historically, each president of the CPUC considered that office to be the most important among state government

agencies, insofar as it wields enormous power over the state's economy. This was certainly true of CPUC President Peevey. He was assuredly not bashful about using his political connections to get his way. He would fight to protect the independence of the CPUC. Peevey, the former utility executive in retirement, had gained a degree of notoriety during the Energy Crisis when he volunteered his services to Governor Davis by helping the state buy power on behalf of the utilities when they were not credit worthy and unable to purchase power on behalf of their customers. A long-time Democratic "pol," and well connected in liberal political and labor circles, Peevey had his backers in the legislature and within the state Democratic Party. None other than former Assembly Speaker Willie Brown, still the most influential voice in California politics, quietly made his views known about the importance of the CPUC's independence and its unique expertise in energy matters. Also, significantly, Susan Kennedy, who had served with Peevey on the CPUC during the Davis administration and was a staunch ally of his, now served as Governor Schwarzenegger's chief of staff. She understood the importance of the CPUC to maintain its independence. Kennedy was, thus, instrumental in convincing the governor to drop his reorganization plan.[88]

In sum, these political forces were too much to reckon with. Seeing the handwriting on the wall, the Little Hoover Commission rejected the governor's

[88] Governor Schwarzenegger's plan was most likely doomed to fail at the outset for political reasons. In addition to the reasons stated above, there was little support for Joe Desmond, the Governor's choice for the job of Secretary. The state had many other more experienced and politically connected individuals, such as CPUC President Michael Peevey, to rival Mr. Desmond.

energy agency reorganization plan and recommend that no legislation be introduced. In the end, the status quo was preserved. The industry and all of its competing factions could return safely to their respective corners in the energy eco system and resume their accustomed roles and behaviors. Except for the fact that the regulators, in particular, the heads of the CEC and the CPUC, having dodged a bullet, felt emboldened and were ready to spread their wings and assert their powers. The Energy Action Plan, unveiled in the Spring of 2003, was the perfect platform for the agencies to enunciate their policy agenda and to exert influence over the industry at large, affecting both those they regulated directly and those one step removed but whose business interests would be affected and would thus need to conform to the directives articulated in the Energy Action Plan.[89]

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[89] The agencies held quarterly public meetings to review progress toward meeting the Energy Action Plan's goals. The investor-owned utilities, along with industry representatives, were expected to report on their respective companies' activities aligned with the Energy Action Plan. As previously mentioned, the CAISO was invited to join the Energy Action Plan as a partner. Through not a state agency, the CAISO's participation accomplished two political objectives, one symbolic and one practical. Politically, the CAISO 's participation signaled to the powers that be in Sacramento, i.e., the governor and the legislature, and to the FERC regulators in Washington, D. C., that the state's key energy agencies were all on the same page and cooperating to develop and implement California's energy policy initiatives. On a practical level, the CPUC and the CEC recognized that the CAISO's cooperation was necessary to carry out certain objectives insofar as new transmission would be required to deliver increasingly higher levels of renewable resources. To accomplish the ambitious renewable energy goals new transmission lines would have to build to deliver power from remote areas, where most of the development occurred, to the urban load centers. Thus, the CAISO's participation was vital.

Such was the political environment out of which the Energy Action Plan emerged. The next section of this chapter will introduce the content of the Energy Action Plan and focus on two of its most significant elements: energy efficiency and renewable energy resource development. The politics behind each of these two policy objectives reveals the regulatory strategies employed by the regulators to advance the state's policy goals while simultaneously controlling implementation through the instrument of the regulated load serving entities charged with day-to-day execution.

Charting A Path Forward

The Energy Action Plan outlined six specific actions with detailed objectives:

- Optimize Energy Conservation and Resource Efficiency
- Accelerate the State's Goal for Renewable Generation
- Ensure Reliable, Affordable Electricity Generation
- Upgrade and Expand the Electricity Transmission and Distribution Infrastructure
- Promote Customer and Utility Owned Distributed Generation
- Ensure Reliable Supply of Reasonably Priced Natural Gas

Most notably, the Energy Action Plan established a *"loading order,"* which prescribed, step-by-step, the types of resources load serving entities would be required to procure to meet customer demand. Energy efficiency, demand response, renewable resources, and distributed generation would now be considered the *preferred resources.* The Energy Action Plan mandated that load serving entities

would be required to exhaust all means necessary to meet customer needs with these resources first, before acquiring fossil or other conventional types of resources. The Energy Action Plan further reinforced California's commitment to decrease energy demand by increasing energy efficiency and to meet new generation needs with renewable and distributed resources.

Promoting Energy Efficiency

Beginning in the late 1970s and early 1980s, California whole heartedly embraced the opportunity to advance energy conservation and energy efficiency, following PURPA guidelines, under the leadership of the California Energy Commission in cooperation with the Public Utilities Commission. To recall, the CEC is responsible for promoting energy efficiency through building and appliance standards, which are often adopted by the federal government and applied nationwide. California represents a large market for major consumer appliances. Rather than produce separate models, one for California and another model for the rest of the country, manufacturers prefer, sometimes begrudgingly, to adopt the more efficient California standards and produce one version of most appliances for nationwide sales. The CPUC's role is to set aggressive goals for energy efficiency and conservation for each of the utilities and load serving entities it regulates. The CPUC works with the investor-owned utilities and energy service companies (ESCOs) to develop programs and measures to transform technology markets within California using ratepayer funds. For example, the CPUC provides financial incentives via utility rebates to induce consumers to purchase energy efficient appliances or to install energy efficient

equipment in buildings and homes, all paid for through customer rates. Nevertheless, in order to induce the utilities to make energy efficiency a prominent feature of their service offerings, a change to the regulatory regime was needed to insulate the utilities from revenue loss.

"Decoupling" Revenues and Profits

To accomplish this objective, California adopted a regulatory mechanism known as "revenue decoupling." Decoupling is the term used to describe separating the link between a utility's sales and its profits to create an incentive for utilities to sell less energy and focus attention on energy efficiency. In a free market, an increase in sales generally yields an increase in profits. It follows that a corporation has an economic incentive to sell as may units as it can produce, so long as the price charged per unit exceeds the marginal cost of production. For energy conservation and efficiency, the incentive is the polar opposite. The underlying public policy objective is for consumers to use *less* energy or to use energy more *efficiently*. The less energy consumers use, the less energy utilities need to produce. In an unfettered market, if output drops, revenue drops, and profits fall. But, the utility system is not strictly based on free market principles. In the highly regulated utility system, regulators have the freedom to set the rules, within certain limits. The utilities, of course, still operate in the context of the broader capitalist market economy. For example, they need to compete in the open market to gain access to capital to finance their operations, and they need to satisfy the expectations of their shareholders and investors by providing them with a reasonable, stable return on their investments.

Decoupling is a shrewd technique, made possible only under a regulatory regime, to satisfy two competing policy objectives simultaneously: advancing the cause of energy conservation and efficiency, on one hand, and safeguarding the financial integrity of the utility on the other.

Revenue decoupling was first adopted for the natural gas industry, in 1978, as part of the CPUC's program to implement certain provisions of PURPA. The commission created the Supply Adjustment Mechanism (SAM), which compensated California gas utilities for any change in revenues due to sales fluctuations. In 1982, the CPUC created the Electric Revenue Adjustment Mechanism (ERAM) for California's investor-owned electric utilities (Weber, Besa, and Miller 2006; Kushler, Youk, and Witte 2006). Decoupling is often credited with making California the nation's most energy efficient state, while promoting economic growth. Decoupling ensures that utilities retain their expected earnings even as energy efficiency programs reduce sales. [90]

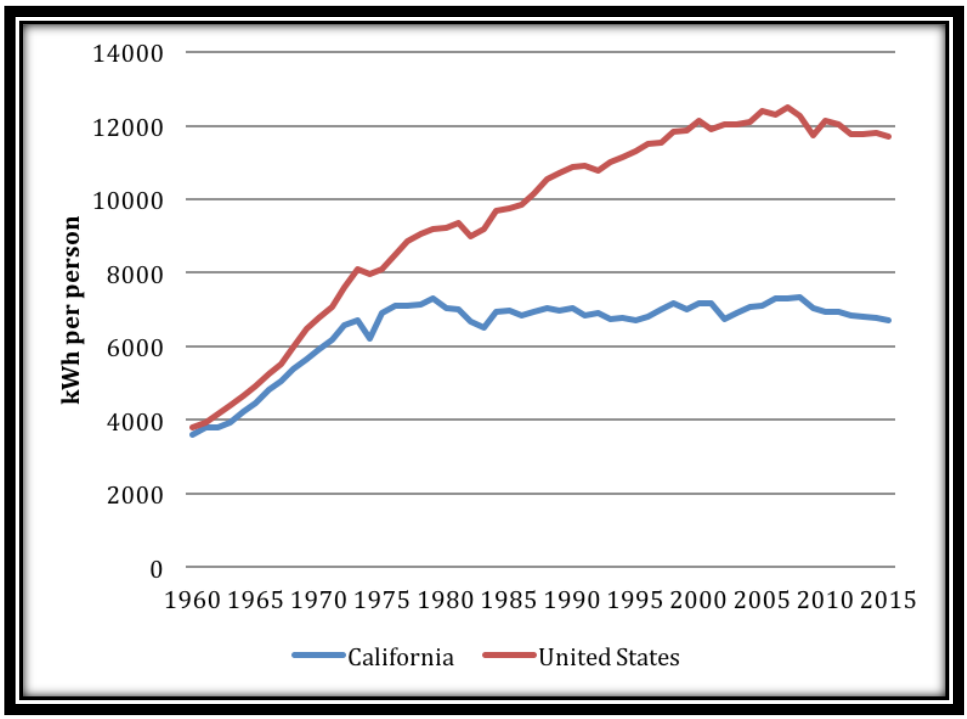
Decoupling works through the normal ratemaking process. A utility submits its revenue requirement and sales forecast to the CPUC in a rate case. The CPUC sets customer rates by applying adjustments to ensure that the utility collects only the amount of revenue necessary to run its business and to provide a fair return to investors. Any excess revenue gets credited back to customers through a balancing

[90] In 2001, in the midst of the Energy Crisis, the California legislature enacted Assembly Bill 29X, which required the CPUC, again, to remove the link between utility revenues and sales for electric utilities.

account. On the flip side, the utility is allowed to recover any revenue shortfall from customers in future rates. Decoupling, now deeply embedded within the bureaucratic regulatory structure, requires little active regulatory intervention. Its practice has become routinized. This, however, is not to suggest that the commission has adopted a completely laissez faire approach toward goal setting or performance evaluation. Blumstein (2010), for example, has noted the imperfections and practical limitations of regulatory oversight in measuring utility performance. Nonetheless, utility program implementation and the financial incentive awards the utilities are allowed to collect are carefully scrutinized in the program and ratemaking process where ratepayer advocates and other intervenors are free to challenge the utilities' claims.

Through the application of revenue decoupling, California's per capita electricity use has remained relatively flat over the last thirty years, while per capita electricity use in the rest of the country has increased by fifty percent, as the figure below shows.

Figure 6: Per Capita Electricity Use, 1960 - 2015.



Data Source: https://www.eia.gov/state/seds/seds-data-complete.php

Similarly, the CPUC has disclosed that

> "California has led the nation in energy efficiency programs since the 1970s. Due to the state's efficiency programs, per capita energy use has remained flat, while the rest of the U.S. has increased by about 33 percent. Energy efficiency activities between 2010 and 2012 resulted in enough energy savings to power nearly 800,000 homes for a year and cut carbon dioxide emissions by 5.3 million tons, the equivalent of removing more than 1 million cars from California's roads" (Source: CPUC website; also see California Energy Commission, 2017:24).

Energy efficiency is California's highest priority resource for meeting growing demand.

Gaining Efficiency Through Command and Control

Following the principles outlined in the Energy Action Plan, the regulatory agencies ramped up their long-standing support for energy efficiency programs. The Energy Commission's 2003 Integrated Energy Policy Report concluded that increasing public funding for energy efficiency would result in the most cost effective means of reducing electricity consumption. The report stated that

> "The Energy Commission and the CPUC are collaborating on a plan to improve the operation of energy efficiency programs, carefully ramping up program funding for electricity efficiency from the current level of $230 million to double this amount by 2008 and triple this amount by 2013. Over the next two years, the CPUC will oversee the expenditure of $512 million in public funding. They will reassess program administration and incorporate efficiency into their procurement process. By spending about $5 billion over 10 years, the state would save consumers over $15 billion" (California Energy Commission, 2003:10; also see California Energy Commission, October 2003).

Consistent with the CEC's Integrated Energy Policy Report recommendations, the CPUC issued decisions, in 2004 and 2005, to create a new regulatory regime for the state's energy efficiency program and established aggressive energy savings targets for the three electric utilities.[91] The CPUC's 2005 energy efficiency decision proclaimed that

> "these goals reflect our expectation that energy efficiency efforts in the [IOUs] combined service territories should capture on the order of 70% of the economic potential and 90% of the maximum achievable potential for electric energy savings, based on the most recent studies of that potential. These efforts are projected to meet 55% to 59% of the IOUS incremental electric

[91] California Public Utilities Commission Decision 04-09-060, September 2004, and Decision 05-01-055, May 2005.

> energy needs between 2004 and 2013" (California Public Utilities Commission Decision 05-01-051, 2005:1).

The commission recognized that a concomitant change in the regulation of the energy efficiency program was necessary in order to achieve these ambition energy savings goals. The commission explained that

> "California had experienced three distinct eras of energy efficiency administration with respect to program choice and portfolio management. During [the] "pre-restructuring/collaborative era" (1990-1997), the IOUs assumed these functions and procured energy efficiency to displace or defer more costly supply-side resources in their resource plans. During the "restructuring era" (1997-2000), with the move to full electric retail competition and privatization of energy efficiency services, the Commission attempted to shift to independent administration of energy efficiency, but without success. In the "current era," which began with the Summer 2000 Initiative, Commission staff selects programs subject to Commission approval, and plays a lead role in day-to-day portfolio management. With the return of IOUs to resource procurement and the policies articulated in the Energy Action Plan, the focus of energy efficiency in California has returned to resource acquisition" (California Public Utilities Commission Decision 05-04-055, 2005:14).

Fulfilling its commitment, and indicating the importance of energy efficiency as the first among the preferred resources, the CPUC, in 2005, committed nearly $2 billion of ratepayer funding statewide, significantly increasing the utilities' energy efficiency budgets, as shown in the table below.

Table 2: Total Investor Owned Utility Energy Efficiency Program Funding, 2005-2008

2005	2006	2007	2008	2006-2008
$495,303,706	$580,686,261	$645,788,446	$742,287,732	$1,968,762,439

Source: California Public Utilities Commission, Decision 05-09-043, September 23, 2005.

The commission has continued to fund customer energy efficiency programs at a high level and has awarded the utilities incentives for achieving measured and verified savings. In 2017, the investor-owned utilities spent $757 million, out of a total budget of $963 million.[92]

By placing responsibility for program administration squarely with the utilities, the commission indicated its intent to use the utilities as the primary agent to achieve its ambitious goals while preserving for itself, the CPUC as the regulatory authority, the power ultimately to exercise its control over the utilities' actions by: (1) establishing overall program guidelines and budgets; (2) approving program design, evaluation, verification, and measurement protocols; and (3) deciding utility incentive awards by means of post hoc review. The commission's policy was originally intended to encourage a competitive energy efficiency market by guaranteeing a role for third-party energy service companies. However, the commission calculated that if the state

[92] California Public Utilities Commission. California Energy Data and Reporting System (CEDAR).

were to achieve its ambitious energy savings goals, retreating to command-and-control would be the most likely path to success.

Advancing Renewable Energy Development - Goal Setting and The Renewable Portfolio Standard

In addition to its commitment to advancing energy efficiency, California launched an ambitious program to maximize the production of renewable energy through legislative action, known as the Renewable Portfolio Standard (RPS). [93] In 2002, the California legislature enacted the state's first renewable portfolio standard with the passage of Senate Bill 1078. The law required retail sellers of electricity, including investor-owned utilities, electricity service providers, and now community choice aggregators, to procure renewable energy for delivery to their customers by adding at least one percent per year, so that twenty percent of retail sales were ultimately to be procured from eligible renewable resources by 2017. The bill directed the CPUC to establish a program to ensure that the utilities and the other load serving entities under its jurisdiction complied with the law by establishing resource plans and procurement mechanisms. Municipal and public utilities outside the purview of the CPUC were

[93] The RPS was preceded by Assembly Bill 3995, enacted in 1990, which established a Planning and Diversity Requirement. Public Utilities Code Section 701.1 requires a renewable "set-aside" and resource diversity through renewable energy purchases. It reads, in relevant part: "(a) (1) The Legislature finds and declares that, in addition to other ratepayer protection objectives, a principal goal of electric and natural gas utilities' resource planning and investment shall be to minimize the cost to society of the reliable energy services that are provided by natural gas and electricity, and to improve the environment and to encourage the diversity of energy sources through improvements in energy efficiency, development of renewable energy resources, such as wind, solar, biomass, and geothermal energy, and widespread transportation electrification."

directed to implement similar programs under the supervision of their governing boards. The Energy Commission was assigned the task of tracking progress and reporting to the legislature.

The law specified eligibility to include geothermal resources, the output of small hydro electric generation facilities of thirty megawatts or less, generation from municipal solid waste facilities, and, of course, wind and solar, the most common renewable energy resources. Large hydroelectric facilities were not eligible to be counted as a renewable resource for the purpose of meeting the RPS. One reason for excluding large hydro was to appease environmentalists who opposed damning rivers. Environmental organizations, such as Friends of the River, the Natural Resources Defense Council, and the Sierra Club, often intervene in FERC hydro relicensing proceedings, fighting to remove dams and shut down hydro electric plants, and to restore rivers to their natural state. They feared that the renewable portfolio standard would encourage the utilities and developers to construct more dams and hydroelectric facilities on the state's waterways, potentially harming fragile river ecosystems and the natural environment. Another reason for excluding large hydro relates to one of the overarching goal of the renewable portfolio standard: to provide incentives for the development of *new* resources. California already has a large amount of hydroelectricity in its supply mix. Counting large hydro toward the twenty percent target would mean, in effect, that California would achieve the RPS goal without any new resource development.

One significant political issue that emerged was whether the utilities were permitted (1) to purchase and import energy from out-of-state resources, or whether only in-state purchases would count toward meeting the RPS goals; and (2) whether the purchase of renewable energy credits (RECs), as opposed to energy delivered from new construction, would be allowed to count. The political force behind this debate was organized labor, which, in lending its support for the RPS legislation, argued that a major purpose of the renewable energy program was to create jobs for Californians, and specifically, union labor jobs. Only the construction of new in-state resources, putting "new steel in the ground," they argued, should count toward meeting the renewable portfolio standard goal.

A debate also arose over whether the legislation should mandate that the utilities purchase specific quantities of renewable energy from each segment of the renewable energy industry. Splinters emerged within the renewable energy community. The solar, wind, and biomass industries lobbied for "carve outs," which would, in effect, require load serving entities to purchase specific quantities of power from each resource type. The renewable energy community did not trust that the utilities would operate in good faith to diversify their renewable energy portfolios. Carving out specific quantities by technology type, they argued, would help to ensure that the utilities would meet the legislative mandate by inducing new investment. Taking a narrow position that clearly exposed their self-interest, the renewable energy community understood that a carve out was the best way to ensure that their specific products would get to market. The utilities, however, resisted top-down, highly

prescriptive mandates. They much preferred that the legislation and regulatory guidelines be broadly stated in terms of meeting overall program goals while leaving implementation specifics to their procurement and contracting expertise. Furthermore, they argued that customers would best be served by following the principles of "least-cost-best-fit," the notion that a competitive auction would yield the best price to protect customers from excessive rate hikes, while simultaneously providing the right mix of resources to balance their supply portfolios to maximize power dispatch and efficient delivery.

Resolution of these issues was relegated, as usual, to the regulatory agencies. The renewable portfolio standard legislation did not mandate specific carve outs for solar or wind, and implementation details to achieve least-cost-best-fit procurement was left to the utilities under the supervision of the CPUC. The Energy Commission was given responsibility by the legislature for certifying resource eligibility and tracking performance. [94] Therefore, the CEC had to initiate a proceeding and open a public process to hammer out eligibility rules and guidelines. The CPUC, which has the ultimate responsibility for approving utility resource procurement plans and power purchase contracts, also had to incorporate eligibility rules into its processes to ensure that the load serving entities under its jurisdiction were taking the necessary steps,

[94] The CEC's rules and regulations for certifying renewable resource eligibility are contained it it's *Renweables Portfolio Standard Eligibility Guidebook*, "which describes the eligibility requirements and process for certifying eligible renewable energy resources for California's Renewables Portfolio Standard (RPS) and describes the process used to verify compliance with the RPS." Source: California Energy Commission.

year-by-year, to increase the percentage of eligible renewable resources in their energy supply portfolios. Like most regulatory rules, the legislature and the CPUC developed an elaborate and complicated set of eligibility requirements, defining compliance periods, and categories, or "buckets," specifying the types of resources and the amount of renewable energy credits, that would count toward eligibility.

Such were the political debates that set the terms of California's first endeavor to advance renewable energy goals. The state was not content to stop there, however. The renewable portfolio standard was revised several times since by either moving up the target date or by increasing the percentage goal. The first revision to the 2002 renewable portfolio standard occurred four years later, in 2006, under Senate Bill 107, which required that twenty percent of electricity retail sales be served by renewable energy sources by 2010. Since then, California has further accelerated the RPS goal under both Republican and Democratic administrations. In 2008, Governor Schwarzenegger signed Executive Order S-14-08 directing that "retail sellers of electricity shall serve thirty-three percent of their load with renewable energy by 2020," [95] and Governor Jerry Brown signed legislation, in 2011, which legally mandated the RPS target at thirty-three percent by 2020. This law also set

[95] Executive Order S-14-08, November 17, 2008.

intermediate RPS targets of twenty percent by the end of 2013, twenty-five percent by the end of 2016, and thirty-three percent by the end of 2020. [96]

In 2015, California passed Senate Bill 350, the *"Clean Energy and Pollution Reduction Act,*" a wide ranging piece of legislation that reset the RPS target to fifty percent by 2030. [97] This was the law of the land, which guided utility procurement plans, until Governor Brown, on September 10, 2018, signed into law Senate Bill 100, [98] which established a new target for California to supply sixty percent of retail electricity sales with eligible renewable energy resources by 2030, and one hundred percent of retail electricity sales with eligible renewable energy resources by December 31, 2045. Not only is this a highly ambitious goal, but one that may prove to be excessively expense, especially in the short run, potentially stretch the capability

[96] "In addition to extending California's RPS program goal from 20% in 2010 to 33% in 2020 and each year thereafter, Senate Bill 2 (1X) (Simitian, 2011) made two significant changes to RPS procurement rules. Specifically, Senate Bill 2 (1X) mandated new RPS procurement requirements within multi-year compliance periods and established new portfolio content categories for RPS procurement and set minimum and maximum limits on certain procurement that can be used for compliance with the RPS program." Furthermore, "[I]n Decision 11-12-020, the Commission implemented the new RPS procurement quantities established in Pub. Util. Code § 399.15(b), for all retail sellers (investor-owned utilities, community choice aggregators, and electric service providers)" (Source: CPUC Website).

[97] The "*Clean Energy and Pollution Reduction Act of 2015*" (SB350) requires the CPUC to focus energy procurement decisions on reducing greenhouse gas (GHG) emissions by 40 percent by 2030, including efforts to achieve at least 50 percent renewable energy procurement, doubling of energy efficiency, and promoting transportation electrification.

[98] Senate Bill 100 revised the 2015 *Clean Energy and Pollution Reduction Act* by requiring one hundred percent renewable electricity by 2045, and sets interim goals of 50 percent by December 31, 2026, and 60 percent by December 31, 2030.

of the transmission grid, and perhaps turn out to be technically infeasible. Furthermore, Governor Brown paired Senate Bill 100 with an executive order establishing a 2045 goal of "net zero-carbon emissions" for the entire California economy.

No sooner did the ink dry from the governor's signature on Senate Bill 100 when Moody's Investor Services, one of the bond credit rating agencies, speculated that the new law would have a negative effect on utility finances because of the high cost of achieving the goal. Moody's also stated that the law would hurt the fossil fuel generators because the demand for their services would be curtailed. This scenario played out previously when the legislature passed the original RPS measure, in 2002, which required load serving entities to achieve a twenty percent target by 2017. In their zeal to avoid financial penalties if they failed to hit the target, the utilities rushed to sign contracts for renewable power at a time when the renewable energy market was not yet mature. The contracts the utilities signed, beginning in 2002, the proverbial "low hanging fruit," were set at a high price, compared to prices a few years down the road. The utilities were again concerned about rising customer rates because of the high cost of renewable power compared to conventional sources. Moreover, the utilities felt they had been burned before when the commission forced them to sign high-priced QF contracts following the PURPA mandate. The utilities considered balking at signing high-priced renewable power contracts, which locked them in for a term of twenty years or more. Taking this bold step would have been interpreted as a snub of their nose at the state's policymakers and regulators, and it

would have caused a public relations disaster for the utilities, because the majority of the consuming public now favored renewable energy. The utilities also felt whipsawed because the RPS goal was a moving target. Between 2002 and 2008, the RPS goals changed three times either by adjusting the target date or the percentage mandate. The utilities, nevertheless, complied with the renewable portfolio standard mandate and met each goal set by the legislature. They found it difficult to reach the first goal of twenty percent. But because developers understood that the utilities would buy their products, backed by the force of law and a compliant commission that was sure to approve contracts no matter what the price, the market responded and more utility-scale renewable energy projects, particularly wind and solar, were built. Thus, reaching the thirty percent target proved to be no stretch for the utilities to meet.

In response to these legislative mandates, the three California investor-owned utilities are well on their way to meeting the long-range RPS targets. Through the end of 2016, SDG&E was at forty-three percent, PG&E thirty-three percent, and SCE twenty-eight percent. [99] Wind and solar together account for more than two-thirds of

[99] Source: California Public Utilities Commission "Renewable Portfolio Standard Annual Report 2017." Each November, the CPUC is required to report to the legislature on the progress of California's electrical corporations in complying with the Renewables Portfolio Standard (RPS) program, pursuant to Public Utilities Code Section 913.4.

all renewable electricity generation, with geothermal, biomass, and small hydroelectric generators accounting for the remainder. [100]

Table 3: RPS Procurement, 2016.

Actual RPS Procurement Percentages in 2016	
Pacific Gas and Electric	33%
Southern California Edison	28%
San Diego Gas and Electric	43%

The community choice aggregators have publicly committed to aggressive RPS goals as a way of differentiating themselves from the investor-owned utilities and as means of attracting customers who otherwise have the choice to continue taking bundled service from the incumbent utilities. In the short-run, many of the CCAs have met or exceeded the statewide mandated RPS goals, mostly by purchasing renewable energy credits to supplement their modest investments in or purchases of renewable generation sources. Similarly, most of the municipal utilities have set aggressive RPS goals and are on target to meet or exceed the mandated targets.

In conclusion, California's commitment to clean energy, as expressed by the renewable portfolio standard, offers a contrast to the regulatory command-and-control approach adopted for energy efficiency. In the case of the energy efficiency program,

[100] Source: California Energy Commission, "Tracking Progress," 2017 Estimated RPS Eligible Generation (In-State and Out-of-State), November 2017. The figures reported do not include unbundled renewable energy credits (RECs).

the CPUC returned to a strict programmatic approach after experimenting with a more liberal, hands-off market-based approach. The commission retreated from giving the utilities broad discretion for program design and execution, which had relied heavily on private third-party energy service companies. In order to meet the objectives laid out in the Energy Action Plan, the commission delegated to its staff the responsibility for selecting energy efficiency programs, subject to commission approval, and it put the load serving entities in a subordinate role for executing day-to-day portfolio management, relying less on third-parties for program implementation. In the case of the renewable portfolio standard, in contrast, the legislature and the commission set a quantitative standard, an objective goal. This approach is highly prescriptive in that the law mandates that specific quotas be met at certain points in time. In practice, however, load serving entities are given a fair degree of freedom to develop their procurement plans, subject to regulatory approval, and the latitude to procure renewable power via a competitive solicitation process. This, however, does not imply that the regulator has abandoned its supervisorial oversight. On the contrary, the utilities must comply with the rules established by law and regulation, and report their progress. Also, they must obtain regulatory approval for the contracts they sign. Non compliance has consequences. A load serving entity that fails to meet specified goals is subject to financial penalties at the expense of its shareholders. The regulator ultimately has the power; how it chooses to set the rules and exercise its powers is a matter of regulatory discretion. A return to regulation was the path chosen by the regulators to ensure that the load serving entities, acting as

their agents, would take all reasonable steps, following the loading order, to meet the objectives of the Energy Action Plan.

The Energy Action Plan II

The Energy Action Plan, as a policy pronouncement, was created in response to the energy crisis. The political compromises reached through the regulatory and legislative struggles to resolve conflicts among competing interests over the design of the restructured electricity market ultimately led to a flawed market design and the ensuing meltdown of the market they created. On one level, The Energy Action Plan may be understood as a political response to a crisis. On a practical level, The Energy Action Plan was essentially a roadmap to guide the work of the energy agencies and to direct the utilities' and other load serving entities' resource procurement activities.

In 2005, the CEC and CPUC issued the second Energy Action Plan (EAP II), building on the success of the previous two-year's work. The press release accompanying the adoption of EAP II contained the following statement by CPUC President Peevey:

> "The adoption of the updated Energy Action Plan provides California with a roadmap of the actions necessary to ensure that the state meets its energy needs going forward while controlling costs, maintaining our leadership on energy efficiency and renewables, and addressing global climate change." [101]

Although formally a product of the CPUC and the CEC, the EAP II, once again demonstrating the cooperative spirit among the state agencies, declared that

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[101] California Public Utilities Commission, News Release, San Francisco, California, August 25, 2005.

> "The development of EAP II has benefited from the active participation of the Business, Transportation, and Housing Agency, the Resources Agency, the State and Consumer Services Agency, the California Independent System Operator (CAISO), the California Environmental Protection Agency (Cal EPA), and other agencies with energy-related responsibilities" (EAP II, 2005:1).

The revised Plan identified steps necessary to achieve the twenty percent renewable energy target by 2010 and thirty-three percent by 2020, targets that were superseded by further legislative action, as previously noted. Significantly, the steps identified included streamlining the approval process for renewable energy projects, providing funding for renewable resources, and developing the necessary infrastructure for the delivery of power generated by new renewable projects.

What was new and important symbolically from a political perspective was the addition to the Plan the notion that the actions taken by the energy agencies would henceforth be necessary to address the effects *global climate change*.

> "Underlying the new aggressive goal was recognition that the development of new renewable resource projects, along with aggressive energy efficiency and demand response programs, was essential to reducing greenhouse gas emissions, moderating increasing dependence on natural gas, and mitigating the associated risks of electricity price volatility" (EAP II, 2005:1).

In addition, the agencies acknowledged that it would be necessary to rely increasingly on renewable resources outside of California, from the western region as a whole. Addressing climate change may have always been implicit and an underlying motive for actions taken on the energy front, the Energy Action Plan II made the connection between energy policy and climate change an *explicit* policy objective, one that would guide energy policy moving forward.

Addressing Global Climate Change - Aiming Ahead

A year following the release of the Energy Action Pan II, the California Legislature passed Assembly Bill 32, the *California Global Warming Solutions Act of 2006*. The statute reads, in part:

> "(a) Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.
>
> (b) Global warming will have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry. It will also increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the state" (California Global Warming Solutions Act of 2006, Chapter 2).

The California Air Resources Board, the agency responsible for implementing and enforcing the measure, proclaimed that Assembly Bill 32

> "marked a watershed moment in California's history. By requiring in law a sharp reduction of greenhouse gas (GHG) emissions, California set the stage for its transition to a sustainable, low-carbon future. AB 32 was the first program in the country to take a comprehensive, long-term approach to addressing climate change, and does so in a way that aims to improve the environment and natural resources while maintaining a robust economy" (Source CARB website).

Assembly Bill 32 requires California to reduce its GHG emissions to 1990 levels by 2020. According to the Air Resources Board, this is "a reduction of approximately fifteen percent below emissions expected under a 'business as usual' scenario." The statute also directs the Air Resources Board to

> "... adopt regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. The full implementation of AB 32 will help mitigate risks associated with climate change, while improving energy efficiency, expanding the use of renewable energy resources, cleaner transportation, and reducing waste" (Source CARB website).

The California Air Resources Board is charged with monitoring and regulating the sources of emissions of greenhouse gases that cause global warming and for reducing emissions of greenhouse gases. Provisions of the Act:

- established a mandatory greenhouse gas emissions reporting mechanism (Part 2),
- set statewide greenhouse gas emissions limits (Part 3) and greenhouse gas emissions reduction targets (Part 4),
- created market-based compliance mechanisms (Part 5), and
- gave the ARB powers of enforcement (Part 6).

The Air Resources Board's efforts to achieve California's 2030 greenhouse gas target are guided by a comprehensive strategic plan, most recently set forth in its *"California's 2017 Climate Change Scoping Plan."* The Scoping Plan addresses measures to achieve emissions goals for all sectors of the economy, and the legislation directs the Air Resources Board to work in consultation with the CPUC to ensure that its policies and programs are not inconsistent with the work of the ARB and that the environmental and energy agencies work in concert to achieve overall program goals.

The Energy Commission and the CPUC continue to work in their respective arenas to implement the actions outlined in Energy Action Plan and its successor, EAP II, now with Assembly Bill 32 goals in mind. Their efforts received a noteworthy endorsement from the legislature with the passage of two supporting measures: Senate Bill 350, the *Clean Energy and Pollution Reduction Act of 2015*, which, as previously noted, reset the goal for renewable energy procurement to at least fifty percent by 2030 (since preempted by Senate Bill 100, which upped the amount to sixty percent by 2030 and one hundred percent by 2045); and Assembly Bill 802, which was designed to enhance California's commitment to energy efficiency by allowing the CEC to expand its efforts to improve the effectiveness of its programs and by requiring the CPUC to authorize financial incentives to utility customers that increase energy savings in existing buildings.

Senate Bill 350 also directed the CPUC to institute an integrated resource planning process (IRP). The IRP is designed to be an "umbrella" process to work in conjunction with the commission's long-term procurement plan (LTPP), which directs the load serving entities to increase the percentage of renewable resources in their energy supply portfolios. The integrated resource planning process is also intended to ensure that the load serving entities under the commission's jurisdiction meet the renewable energy targets, set by law, to allow the electricity sector to contribute to California's greenhouse gas emissions reduction goals.

In the aftermath of the energy crisis, two additional regulatory measures were put in place to ensure service reliability and market stability: a resource adequacy program (RA) and a procurement program with a view to the long-term, the LTPP. The resource adequacy program is designed to ensure that there would never again be a shortage of energy to meet customer demand, avoiding the scenario of blackouts that caused a great deal of public consternation during the energy crisis. Under the resource adequacy program, all load serving entities -- utilities, community choice aggregators, and direct access energy service providers -- must commit their own generation or contract with generators owned by others to meet reserve requirements set by the CPUC for year-ahead and month-ahead delivery of energy. To support the utilities' procurement activities, the CPUC sponsored legislation in 2002 (Assembly Bill 57), which changed the paradigm for procurement by creating an upfront independent review process of utility procurement decisions and removed after-the-fact regulatory prudence reviews. Recognizing an inherent flaw in the original deregulated market design, which relied too heavily on short-term spot market purchase transactions, the state now looks at a ten-year planning horizon and long-term contracts to meet system needs. The long-term procurement plan considers all resources to meet capacity requirements but, following the directives of the Energy Action Plan and supporting legislation, the program emphasizes procuring energy from renewable resources first to meet California's greenhouse gas reduction goals.

The integrated resource planning process, along with the resource adequacy and long-term procurement programs, were designed to solve the supply and delivery

sides of the equation. Yet, there is now a move afoot to further centralize procurement rules under the direction of the CPUC or some other to-be-defined centralized procurement agency, thus possibly titling in the direction of increased centralized planning.

The Interventionist Regulator & The Problem of Agency

An important feature of regulatory authority is the power that regulators have to use the regulated entity as the *instrument* or *agent* to achieve policy objectives. The notion of *agency* has been a central feature of this work. I have argued that the California Energy Crisis created a political vacuum which stymied political leaders in the state from taking decisive action to restore order to stabilize the market during the crisis. This situation provided a rare opportunity in the aftermath of the crisis, which enabled the regulators to intervene in the regulatory process, and, most significantly, to use their institutional positions of power to set the energy policy agenda, largely on their own terms. Intervention thus enabled the regulators to use the regulated entity as the instrument to carry out their policy directives in a novel way. It allowed the regulators to develop programs to achieve the state's ambitious energy and environmental goals by means of the Energy Action Plan and its *loading order*.

A major purpose of legislation, in essence, is to set policy objectives and to establish a general framework for policy to be carried out. Regulators are responsible for creating rules and designing programs to implement policy to meet legislative mandates. Regulators, in turn, use the regulated entity as the instrument, or agent, to

achieve established policy objectives. Legislation can either be expressed in broad terms, establishing goals or targets, or it can be worded narrowly and be highly prescriptive, leaving few degrees of freedom for the regulators to act. Likewise, implementation imposed by the regulators on the regulated entity can be highly prescriptive, command-and-control-like, or it can be light-handed and lean in the direction of laissez faire.

The two policy initiatives examined previously in this chapter -- promoting energy efficiency and advancing renewable energy development -- offer contrasting approaches to policy formation and implementation on the command-and-control/laissez-fair scale as promulgated by regulatory action and guided by the Energy Action Plan and its successor EAP II. In the case of energy efficiency, the regulators chose to keep their hands firmly on the levers of control. The CPUC set programmatic goals and targets for the utilities to meet; it dictated measurement and verification protocols; and, most importantly, the commission held the purse strings to set program budgets and to award financial incentives to the utilities for proven achievements. Implementation of the renewable portfolio standard offers a contrast to the command-and-control approach applied to energy efficiency. For the RPS, legislation set goals and defined eligibility criteria; program design was delegated to the CPUC; and further program implementation and compliance were left to the regulated load serving entities, under the supervision of the commission.

Tension will always exist between command-and-control and laissez fair approaches to regulation. Regulators may give industry the illusion of control by loosening their grip, by paying lip service to the "market" and "competition," or by carving out space in the market for private third parties to compete with the incumbent utilities. But, even under the most liberal circumstances, the regulators ultimately maintain control over the regulated entities in numerous and often not so subtle ways. For instance, regulators have the authority to impose financial penalties if a regulated entity fails to meet mandated goals. In extreme circumstances, regulators can exercise their powers to revoke an utility's franchise or license to operate if a violation is especially egregious.

The relationship described here between the state regulator and the regulated entity, embodied principally by the investor-owned utilities, but now also by community choice aggregators and direct access providers, is expressed by economists and political scientists as the *principal-agent relationship*. As classically defined, the principal-agent relationship is an arrangement in which one entity, the principal, designates another, the agent, to act on its behalf. As understood here, government regulators use the regulated load-serving entities as the instrument, or agent, to carry out the state's policy directives. Government regulators and the regulated industry share a common set of interests and, in theory, there should be no conflict between the two in carrying out agreed upon objectives. However, in this symbiotic relationship power is asymmetrical, not equally balanced. Government regulators occupy a position of power in the bureaucratic political structure, and

ultimately hold sway over the entities they regulate. Regulators wield their power programmatically by goal setting, which ultimately has the effect of controlling the economic fortunes of those it regulates. Economists and political scientists have cautioned that the asymmetrical nature of the power relationship between the principal and the agent may, at times, pose a dilemma in circumstances where the interests of the two are not aligned and the agent is motivated to act in its own best interests, contrary to those of the principal (Carl Blumstein, 2010; Eisenhardt, 1989:57-74; Blonz, 2018).[102] *Moral hazard* is one potential result stemming from the asymmetric nature of the power relationship between the principal and the agent, if actions taken by the agent do not bear consequence. In practical terms, a hands-off approach to regulation can lead to inappropriate behavior by the agent. Therefore, the natural tendency of regulators is to use their powers to control, in other words, to regulate. However, the nature and degree of regulatory authority is contingent upon particular historical circumstances.

Agency and *crisis* are useful constructs to help explain the historical origins and the particular character of regulatory intervention in the energy sector. It would be misleading, however, to conclude that the regulator's powers are absolute and that regulatory intervention in and influence over industry are determinative in all

[102] Blonz (2018), in a recently unpublished working paper, has demonstrated, through an empirical analysis of a utility energy efficiency appliance replacement program, how "misaligned incentives and ineffective monitoring" led to conflicts between the principal and the agent, and how such misalignment reduced the welfare cost of the program. Blonz's study is an illustration of the classic principal-agent problem.

circumstances. The question then become how much freedom do state actors have to exercise control over the market in their capacity to regulate and to initiate reform. This is the challenge that regulators and the industry now face.

Back to the Future

Measures to increase the renewable portfolio standard and doubling down on energy efficiency are intended to put California on a path to meet its supply commitments with "preferred" resources. Now, with the issue of global climate change added to the mix, policymakers have installed *"decarbonization"* as the third pillar to support the energy policy platform. California energy policy has now come full circle. Or, perhaps, is it that we have arrived back to the future?

When California, in the 1990s, embarked upon its journey to evaluate trends in the industry and, looking toward the future, examined whether the regulatory structure was appropriately designed to manage the industry as it was evolving, the regulators held two issues paramount: *cost* and *reliability*. Would prices charged to consumers for utility services be affordable and sustainable in the long-run, especially given the cost of the many social programs heaped on top of basic service? Would competition bear the promised fruits of lower prices and enhanced customer service? Would new institutional relationships and a restructured market ensure that the lights would stay on and consumers afforded necessary protections? Would the progressive policies introduced more recently, such as advancing renewable energy procurement, increasing energy efficiency, mandating solar installations on new housing and

commercial building construction, authorizing energy storage projects, and other programs aimed at reducing carbon emissions, improve living conditions and contribute to economic growth and vitality? Or would such programs add cost and burden the state's economy?

The unfortunate reality is that California policymakers do not have answers to these questions; nor do they have a coherent plan. They have candidly admitted as much. The state's policy leaders do, however, recognize that as they chart a path forward, and if the policies they promulgate are not carefully crafted, California might "drift" into another crisis. To address the future course of events, the CPUC has taken the lead among the state's regulatory agencies by opening a dialogue to start a new conversation within the industry to gain a better understanding of the issues at hand and to seek solutions to mitigate what might emerge as problems, or yet another energy crisis.

The CPUC has recently published a report entitled *"California Customer Choice: An Evaluation of Regulatory Framework Options for an Evolving Electricity Market."* [103] The report's title has a familiar ring. The commission is once again posing

[103] California Public Utilities Commission, *"California Customer Choice: An Evaluation of Regulatory Framework Options for an Evolving Electricity Market,"* August 2018. The report is sometimes referred to as the Green Book, because of the color of its cover sheet, and also because of its reference to the former Yellow and Blue Books. The CPUC published an earlier draft of the report on May 3, 2018. According to a statement on the CPUC 's website, the report is "designed to initiate a policy conversation among a wide range of stakeholders and interests about the future of California's electricity market, rather than make specific recommendations. Over the past year, the California Customer Choice team has reviewed the history of

questions about the regulatory framework and the evolving energy market, themes found in the 1990s vintage Yellow and Blue Books. What is different this time around, compared with the process initiated in the 1990s, is that today's regulators do not have a vision or a coherent plan, and they have few leads to follow. They candidly admit that "California needs a clear long-term vision for its regulatory framework." [104]

When California first embarked on the journey to deregulate the electricity industry, it drew lessons from the experience of other industries -- airlines, trucking, banking, etc. --- that had previously undertaken a deregulation course. California was also able to rely on lessons learned from its own experience deregulating the telecommunications and natural gas industries. When California looked for a working model in electricity, it found features of the U. K. system to emulate. However, California learned the hard way that imitation does not necessarily work. After all, the U. K. deregulation effort was aimed at privatizing a state-run monopoly to create a private, competitive market by means of a highly regulated centralized power pool and a single regulator with enormous powers to monitor the market and

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competition and choice in California, including the California Energy Crisis, evaluated the current regulatory construct, and analyzed selected markets to provide lessons learned for California. This draft paper will inform the next stage of the process to gather input before issuing a final paper. California must consider how to shape this new environment in a way that continues to ensure reliable, clean, and affordable electricity for customers and equitable treatment for all market participants."

[104] Ibid, p.4.

steer the ship of industry. Grafting that system onto California's albeit highly regulated but essentially private utility market did not work. Reliance on short-term, spot market transactions organized by a centralized power pool with little regard for long-term power purchase contracts, resource adequacy rules and sufficient power supply to meet demand, and financial hedges as insurance, proved the undoing of California's experiment with electricity restructuring. Besides, the U. K. model is foreign to the American republican system of government with its federal- and state-level regulatory authorities. Later, when California enthusiastically embraced solar, it copied Spain's lead in providing incentives and state subsidies to promote development, and it adopted Germany's feed-in tariff [105] approach as a tool to accelerate the deployment of rooftop solar and other small-scale self generation projects. [106] Following the examples set by these two European countries ultimately led California to adopt and accelerate the renewable portfolio standard, but with concomitant high costs that translated into high rates. In its zeal to be a leader in

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[105] A feed-in tariff (FIT) is a policy mechanism used to encourage investment in and deployment of new technology. A feed-in tariff program typically guarantees that customers who invest in an eligible renewable electricity generation facility, such as a roof-top or utility-scale solar photovoltaic system, will receive a set price from their utility for all of the electricity they generate and provide to the grid. The price is usually set at a high enough level, usually above a standard rate, as an economic incentive to encourage investment and deployment of the new technology.

[106] "The CPUC's Self-Generation Incentive Program (SGIP) provides incentives to support existing, new, and emerging distributed energy resources. SGIP provides rebates for qualifying distributed energy systems installed on the customer's side of the utility meter. Qualifying technologies include wind turbines, waste heat to power technologies, pressure reduction turbines, internal combustion engines, micro turbines, gas turbines, fuel cells, and advanced energy storage systems." Source: CPUC Website.

combating climate change, California has set itself up not as a leader but as a "sobering example," in the words of the University of California, Berkeley, energy economist, Severin Borenstein.

The CPUC's current evaluation of the regulatory framework for the evolving electricity market has opened a new chapter in the evolution of California energy policy. The issues identified in the customer choice report illustrate the many problems that the industry needs to solve. The state's policymakers, and the industry as a whole, need to be mindful of the mistakes made in the zeal to reform the electricity industry two decades ago, which ultimately led to California's energy crisis. California needs to proceed cautiously to avoid repeating the same mistakes again or to create new ones. California has formulated an ambitious plan to lead the nation and to serve as an inspiration for the rest of the world to emulate as it proceeds down a path to shape the course of events that threaten the planet.

Many of these issues are beyond the immediate purview of this study, which aimed to demonstrate how conflict among structural interests and crisis in the energy sector led to regulatory and policy initiatives that disrupted prevailing institutional relationships and set a new course for policy development. The theory of "structural interests," provided a useful theoretical framework to demonstrate, through an historical analysis of the energy industry, how ideological and interest group political dynamics shaped market and regulatory reform initiatives and the development of energy policy in California, and, more generally, how political power operates in the

United States. The next crisis may provide yet another opportunity for further research to examine the efficacy of the theory of structural interests.

POSTCRIPT

AN INSURGENT MOVEMENT:

FREEDOM AND REGULATORY CONSTRAINT

The American system of energy delivery is still largely a private system, operating in a capitalist economy where profit is a powerful motive. American public utilities are "public" in the sense that they offer an essential public good or service. They are investor-owned private enterprises, governed by private boards, organized to provide a public service while maximizing shareholder value. Investor-owned public utilities are still the dominant institutional force in the industry, and the predominant instrument through which public policy is executed. Public power, in contrast, is not for profit, community owned, and supervised by locally elected or appointed governing boards. Investor-owned and publicly owned utilities coexist, side-by-side, often sharing common social objectives, especially when government mandates come into play. Today, however, an insurgent movement for local control is ascendant, which some believe has the potential to cause the most radical transformation of the industry in the past one hundred years.

The long-fought battle to reform the energy industry produced two significant results: *competition* exists in the electricity sector, in both wholesale and retail markets, and most customers in the state, and indeed throughout the nation, can exercise *choice* through one of several means: community choice aggregation, self generation, or direct access. Yet, these victories and the insurgent community choice

aggregation movement pose several new challenges for California policymakers. Community choice has exposed a tension between local versus state-level control over the implementation of energy policy, which, in turn, has raised the question of the future role of the state regulator. Greater numbers of customers can exercise choice in the form of direct access and through community aggregation programs, and, as consequence, the customer base of the inventor-owned utilities will inevitably shrink. "Departing customer load," therefore, raises a fundamental question that lies at the heart of the regulatory compact: who will bear the obligation to serve and who will bear the responsibility to act as the provider or supplier of energy services in the last resort. Finally, one the most serious issues looming over the community choice aggregation movement itself is whether it can demonstrate long-term financial viability. These issues will be addressed in this postscript to the empirically based theoretical analysis presented in the previous chapters.

Local versus State-level Control

A community that elects to offer its citizens the choice to aggregate loads by banding together is self-governed by a board of locally elected officials. Community choice proponents argue that the CCA governance structure and local focus enable these organizations to be nimble and more responsive to the needs of their constituents, compared to the state-level regulatory regime under the CPUC. They believe, with some justification, that the CPUC's rules and regulations are cumbersome, stifle innovation, and impede quick response. Furthermore, the

proponents of community choice believe that their governance structure holds them more accountable to the public they serve.

Community choice aggregation programs, by law, must still meet resource adequacy requirements and fulfill certain social obligations, such as achieving statewide mandated renewable energy goals. They must also adhere to the same principles that apply to investor-owned and publicly owned utilities, such as instituting consumer protection procedures, and they must provide universal access and equitable treatment for all classes of customers. Community choice aggregation programs, however, are free from many of the strict controls that affect pricing and service offerings imposed on the regulated utilities, and they are free to manage their own resource procurement activities. From a statewide perspective, the CCA system appears to be fragmentary, a loose confederation of individual entities, each acting on its own behalf. This concern has led to a growing tension regarding the degree to which CCAs will be allowed to operate free from state-level control with respect to the services they offer and how resource procurement will be administered to ensure that state-mandated renewable procurement, resource adequacy, and greenhouse gas reduction goals are met.

Currently, there are no overarching rules that require community choice aggregation service offerings or rate options to conform to a single set of statewide standards. Nor is there is single regulatory authority assigned with the responsibility to oversee community choice tariffs to ensure that they are applied fairly and

consistently, and that they provide adequate consumer protections. In contrast, the CPUC is vested with the legal authority to exercise control over the investor-owned utilities, whose tariffs and service offerings must earn regulatory approval. The CPUC also has the legal authority, along with a bureaucratic apparatus, to enforce consumers protections. It has a consumer advocacy branch, the Public Advocates Office; utility safety and enforcement divisions; a customer education program; a Public Advisors Office; as well as formal rules and an adjudicatory process for handling consumer complaints. Utility tariffs and the CPUC's consumer protection authority may serve as templates for the CCAs to use in setting their own rules. But, for now, each CCA is free to set its own programs and standards, as long as they adhere to the same guiding principles and provide the same general kinds of protections that the CPUC provides. The community choice movement is concerned about whether its individual members will continue to be allowed to retain local control over rate setting, pricing, and service offerings, key features of community choice self governance. This concern will only be heightened if the legislature assigns the CPUC responsibility to oversee the community choice aggregation program if it believes that one set of statewide rules under the authority of a single regulatory authority is the most efficient bureaucratic means to guarantee consumer protection.

A second threat to the independence of community choice is the movement toward centralized, statewide resource procurement. A centralized, statewide procurement program under the direction of a single agency, such as the CPUC or another state

agency, is one way to ensure that renewable portfolio standard and resource adequacy goals are met, and that sufficient energy supplies, whether conventional or renewable, are available on demand, at affordable prices, to keep the lights on for all citizens of the state. California may choose to resurrect the Power Authority, or a similar state agency,[107] to act as the sole buyer of electricity for the investor-owned utilities and the community choice aggregators, in spite of the fact that some community choice aggregators have joined together to coordinate their power purchase programs.

The CCAs, of course, prefer to control their own destiny. They are quick to point out that municipal utilities, historically, have co-existed alongside investor-owned utilities and have not only functioned well but have fulfilled their duty to serve free from state-level control. CCA's are considered similar to but a lesser version of a public municipal utility, a "muni-lite." Like municipal public utilities, community choice aggregation programs are self-governed. CCAs and public municipal utilities are free from CPUC control when it comes to setting customer rates, but both are responsible for procuring power to meet customer demand. They both face the same pressures to meet resource adequacy requirements, renewable procurement goals, and greenhouse gas reduction targets, whether imposed by state law or by local decision. A major difference between a traditional municipal utility and a community choice aggregator is that some publicly owned municipal utilities possess their distribution facilities to serve their end-use customers. CCAs, at least for now, rely on the

[107] SDG&E has drafted sample legislative language and appealed to the legislature to establish a state-level power procurement entity by 2023 and to take over the responsibility for power procurement from electricity companies by 2025.

infrastructure and assets of the investor-owned utilities to deliver energy to their constituents. This hybrid system may prove to be a workable model indefinitely, given the enormous amount of capital that would be needed by any individual CCA to purchase the distribution system of an investor-owned utility or to invest in its own infrastructure, given their financial constraints and limited access to capital markets.

The CCA community argues that independence from state-level control gives their members the flexibility to move more rapidly toward achieving the renewable portfolio standard, a goal, they claim, is shared by the majority of their constituents. To support this assertion, the CCAs point to a recent study, conducted by the UCLA Luskin Center for Innovation, which concluded that CCAs are on track to meet the 2030 RPS interim goal by serving their constituents with at least sixty percent of renewable power a decade ahead of the investor-owned utilities (DeShazo, Gattaciecca, and Turnbull, 2018).

The CCA community believes that its independence would be threatened if the state's energy regulators choose to expand their authority or seek new statutory powers to gain further control over community choice programs. The potential for the CPUC to impose new mandates on the investor-owned utilities will inevitably trickle down and *de facto* become new requirements for the CCAs. Community choice aggregators will undoubtedly be expected to keep pace with the investor-owned utilities as further policy requirements are imposed on them by new laws. The state's policymakers would have to be convinced that a single set of statewide

regulatory measures would provide the best assurance that resource adequacy and renewable portfolio standard requirements would be met, that stability in the energy marketplace would be enhanced, and that customer protections would be preserved under the control of the CPUC. Such conditions would invariably strike at the heart of CCA independence and would present a serious challenge to the evolving hybrid system of energy delivery. It would definitely instigate a political conflict, pitting local control against state-level control. CCAs represent an emerging structural interest in the energy delivery system. The community choice aggregation movement poses a threat, not only to the dominance of the incumbent utilities, but also to the autonomy and power of the state's regulators. Government regulators fear that the proliferation of community choice aggregation programs is moving too swiftly, progressing beyond their reach. They see the further expansion of community choice and local control as an existential threat to their bureaucratic rule.

The Energy Future and the Role of the Regulator

What, then, does the future hold for the state's regulators? If, indeed, the CPUC can resist the temptation to micromanage the utilities' procurement decisions, and instead help to facilitate the creation of a independent centralized procurement market, it may be able to free itself to focus its efforts on that portion of the utility system that requires ongoing regulatory oversight. Alfred Kahn, considered by many the intellectual godfather of the U. S. industry deregulation movement, published a monograph based on an analysis of the direction that deregulation policies in the telecommunications and electric power industries took. His reflections, not

surprisingly, led him to conclude that "existing regulatory efforts are biased toward demonstrating the immediate benefits of competition at the expense of promoting efficient markets" (Kahn, 1998:v).

The utility distribution system -- the "pipes and wires" business -- remains a natural monopoly. There is a continuing and growing need for investment in the pipes and wires business to replace aging infrastructure. In addition, investment in new technologies is needed to facilitate the "grid of the future." Long gone are the days of one-way communication from the utility to the customer. Digital technology now allows for two-way communications. Relying on advanced telemetry and computer automation, "smart meters," and the "smart grid" promises to provide multiple benefits, such as transmitting and distributing electricity more efficiently, enabling quicker restoration after power outages, increasing the integration of renewable and distributed resources, facilitating improved load management programs and time-of use-rates, and presumably lowering operational costs for utilities and lower costs for consumers. Regulating the utility distribution business should offer a sufficiently robust agenda and myriad challenges for the regulators.

The nation's energy crisis following the Arab Oil Embargo marked the beginning of a trend that later, during the California Energy Crisis, weakened the regulatory compact and undermined long-established institutional principles and economic guarantees. A dilemma facing the state's regulators is that the utility remains the primary institution for the state to carry out its social and environmental programs,

yet government regulation ultimately has only limited control over market forces. Without a financially healthy and viable utility, the question remains as to whether California can proceed on its current path to achieve its ambitious environmental goals. A recent example will illustrate this point.

During the past two years, California has suffered unprecedented damage to life and property from wildfires up and down the state. Many scientific experts believe that the recent surge of wild fires may be attributed, in part, to the effects of global climate change. Some of these fires were caused by utility equipment, and, in other cases, utility equipment may have been a contributing factor, though not necessarily the primary cause. For example, gale force winds may down a power line, thus causing it to come in contact with vegetation and ignite a fire. In spite of the utilities' best efforts to trim vegetation a safe distance from a power line in compliance with public safety standards, even the best vegetation management practices cannot prevent an "act of god." The utilities argue that in instances where their power line equipment is in full compliance with public safety standards and when their actions are not found be negligent, they should not be held strictly liable for damages.

California courts have a history of applying the theory of "inverse condemnation" [108] to decide liability and to award damages in a situation where utility equipment is involved in a wildfire. The Fifth Amendment to the U. S. Constitution states that

[108] "An inverse condemnation action is an eminent domain action initiated by one whose property was taken for public use, as opposed to by the condemning public agency." *Barham v. S. Cal. Edison Co.*, 88 Cal. Rptr. 2d 424 (1999).

private property cannot be taken for public use without just compensation. Yet, California courts have found that there is no basis for distinguishing between a publicly verses a privately owned electric utility in deciding whether a nongovernmental entity can be held liable for a "taking" of private property. This argument is based on the logic that because a private investor-owned public utility operates under government regulation and because, like the government, it possesses the power of eminent domain, there is no difference between a governmental and a nongovernmental entity. If the theory of inverse condemnation is upheld, in accordance with recent court rulings, the utilities would effectively be driven into bankruptcy if strict liability standards and damages, amounting to tens of billions of dollars, are awarded to fire victims and assigned to the utilities.

The state's policymakers, including the governor, the legislature, and the public utilities commission, have recognized the unintended consequences of strictly applying the theory of inverse condemnation to the utilities. The question of how to award damages from wildfires poses a serious public policy concern and points to the issue of the role that the utilities play in serving the public interest. If the state needs the utilities to act as the agent to carry out its energy and environmental policy agenda, the state cannot afford to allow the utilities to go bankrupt. Utility revenues are the main source of funding used to carry out the state's progressive energy and environmental policy agenda; they pay the bill to implement social programs, such as advancing renewable energy supply and driving toward a zero carbon economy. One solution being sought to address the unintended consequences of inverse

condemnation is to socialize the cost of damages by issuing revenue bonds and repaying their costs by adding a surcharge to customers' bills or by embedding such costs in customer rates. [109] A similar method was used to "bail out" the utilities from excessive wholesale power costs as a means to resolve the California Energy Crisis. The result of this solution is the preservation of the private utility system while socializing risk. It underscores the notion that the utilities may be too important to fail, and that the regulators' power and position remain secure.

The Problem of Departing Customer Load

The proliferation of community choice aggregation programs, the expansion of direct access, and customer self-generation options, such as rooftop solar, present additional challenges to the dominant position of the investor-owned utilities and also pose new challenges for the regulators. Recent legislation lifted the annual cap on direct access, but only for non-residential customers. This victory, largely for big business, was hard fought in the legislature. The recent direct access legislation was backed by large corporate energy users with strong lobbying support from various trade groups, such as the Direct Access Coalition (DAC), which represents large commercial energy users, including the University of California and State University systems; the California Retailers Association; the California Large Energy

[109] On September 21, 2018, Governor Brown signed into law Senate Bill 901, which allows the utilities, and PG&E in particular, to finance liabilities from 2017 wildfires by issuing "cost-recovery" bonds to be repaid by charges on customers' bills, with approval by the CPUC. The bill did not address reforms to the application of inverse condemnation, which will likely be an issue for the courts and for the legislature during its next session, in which further legislation may be introduced to deal the liabilities associated with wildfires in 2018 and beyond.

Consumers Association and the California Manufacturers and Technology Association; the Western States Petroleum Association; commercial building associations; the Silicon Valley Leadership Group; and energy suppliers such as Shell Energy North America and Constellation through their trade group, the Alliance for Retail Energy Markets (AReM).

As the bill moved through the legislative process, it faced fierce opposition from dozens of groups, including the California Community Choice Association, The Utility Reform Network, and environmental groups, such as the Natural Resources Defense Council and the Sierra Club. TURN's opposition was based on the concern that energy service providers would "cherry pick" the most profitable customers, therefore leaving the utilities with high-cost-to-serve customers that contribute little to their margins. This, TURN argued, would increase the utilities' cost to serve and drive up rates, spreading fixed costs over a smaller customer base. The CCAs see competition from direct access as an immediate threat in the battle for new customers. Their interests are not aligned politically with direct access providers. The economic survival of CCAs depends on the size and growth of their customer base. Their opposition to the direct access legislation cooled once the bill only increased the cap, and only for non-residential customers, rather than fully opening direct access to all consumers. The environmental groups, along with TURN and the CCAs, believe that private, independent energy service providers will not act as aggressively as the CCA community or the investor-owned utilities, under the close watch of the legislature and the state's regulators, to achieve RPS and greenhouse gas reduction goals. The

direct access legislation, Senate Bill 237, finally gained legislative support once organized labor removed its opposition.[110] As a result, more non-residential customers now have the option to purchase their electricity from a non-utility energy service provider or to opt out of taking service from a CAA or bundled service from an investor-owned utility.

The legislature's rationale for excluding the residential sector is that residential consumers are able to exercise choice through further expansion of community choice aggregation programs, as CCAs continue to gain momentum throughout the state. Legislators also cannot escape the memory of the California Energy Crisis. Consumer advocates and the environmental community have waged a public relations campaign by pinning blame on direct access for causing the energy crisis. Their campaign apparently has been partially successful in influencing the legislature to proceed cautiously in its treatment of direct access. Legislators still believe that direct access does not provide consumers with adequate protections, and fear that residential customers might once again fall prey to the "market" and to unscrupulous energy service providers. They are reluctant to take the state down the direct access path again, at least for the foreseeable future.

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[110] The labor unions are opposed to community choice. The International Brotherhood of Electrical Workers, in particular, sees the expansion of CCAs as threat to job security. Most IBEW members work for the investor-owned utilities. They fear that as CCAs grow and as the investor-owned utilities shrink, there will be fewer union labor jobs. Their legislative strategy is to oppose anything that the CCAs favor.

Nevertheless, as greater numbers of customers migrate to community choice aggregation programs and direct access, the utilities' customer base is destined to diminish. Furthermore, advances in new and distributed energy technologies, and local community-controlled "micro grids," may also open additional opportunities for customers to escape utility service, which would further erode the utilities' customer base. With a significant risk of "departing utility load," the commission is faced with the vexing question of how many customers will remain with the utility to spread its fixed costs. Nearly one-third of California investor-owned utility load is now served by entities other than the investor-owned utilities: direct access accounts for thirteen percent, and community choice aggregation programs twenty percent of the customer load statewide. These percentages are certain to grow. In fact, proponents of community choice boast that within a few short years, CCAs will serve more customers than the investor-owned utilities.

The basic value proposition offered by community choice is to provide clean energy, often at a slightly reduced price compared to the incumbent franchise utility, in addition to appealing to the civic virtue of local control. These principles are attractive to large segments of the population. All may be well and good in normal times; however, in times of economic uncertainty or distress will the community choice and direct access business models hold? There is, after all, a cost of freedom.

The Obligation to Serve verses The Supplier of Last Resort

Historically, the regulatory compact provided a quasi-social insurance policy, a guarantee of "universal service." However, the problem of departing customer load and changing market fundamentals have called into question the meaning of the "obligation to serve." Traditionally, the obligation to serve meant that the regulated utility would, under all circumstances, be required to provide full bundled service to any customer in its franchise service territory that requested utility service. The social quid pro quo meant that in exchange for providing service, the utility would be guaranteed sufficient revenue to cover its costs to serve. This fundamental principle generally still holds. Customers that depart utility service and migrate to a community choice program or to direct access may wish to return to bundled utility service at some future date. If this occurs, the utility is still obligated to accept returning customers. Therefore, "switching" rules need to be established to define under what conditions customers will be allowed to change their service provider and, if any costs are incurred, who should bear the responsibility to pay such costs.

These are not merely hypothetical questions, given the continuing uncertainty in today's power markets. For example, a CCA may decide to cease operation or find that it can no longer function as a profitable business enterprise. In such a case, customers will automatically return to bundled utility service, unless new rules are established to enable stranded customers to be absorbed by a sister CCA or a direct access provider. Other states with years of experience with direct access, and more recently with community choice aggregation programs similar to California, have

developed rules to address the problem of customer migration. When the market for direct access collapsed during the energy crisis in 2001, and the direct access program was suspended by the legislature,[111] many customers who chose to obtain their electricity from an energy service provider returned to bundled utility service. This default arrangement was intended to provide the social safety net that stood between rational order in the marketplace and chaos.

There is a further economic dimension caused by the problem of departing customer load and the obligation to serve. The investor-owned utilities continue to invest capital in facilities and infrastructure required to meet the needs of today's customers. As the utilities' customer base shrinks, the cost of such investments will invariably be spread over fewer numbers of customers. Thus, as the unit cost per customer increases, rates will rise in proportion. The utilities fear that if costs spiral out of control and customers experience huge rate increases, this situation will precipitate another consumer revolt and perhaps lead to another financial crisis for the themselves and the state. California's experience during the industry restructuring period of the 1990s witnessed how prior capital investments in power plants and high-priced supply contracts became stranded costs, and how the transition period leading to an open market and competition involved a lengthy political process that generated a complicated set of new statutory requirements and regulatory rules. The utilities want to avoid a repeat of this experience. Therefore, the regulators will need

[111] California Public Utilities Decision 01-09-060, September 20, 2001, suspended customers' right to enter into direct access contracts or agreements.

to address the economic impact of departing customer load in terms of equity and fairness, and decide if it is appropriate to burden the utilities with the responsibility to serve as the backstop without just compensation and sufficient financial assurances, which only the state can provide.

Investment in facilities and infrastructure is not the only obligation foisted upon the investor-owned utilities. All load serving entities, including the investor-owned utilities, must procure sufficient resources, prescribed by resource adequacy rules, to keep the lights on. In addition, they must meet statutory renewable energy procurement requirements. However, as increasing numbers of customers depart utility service for an alternative supplier, who in the future will the utility be purchasing power to serve? The problem of departing load has exposed a flaw in the logic of burdening the utility with the obligation to serve *and* the obligation supply, especially if no plans had been made by the utility to procure power on behalf of customers who leave their system for an alternative supplier. The obligation to serve ought to be recast in terms of who bears the responsibility to be the *supplier* of last resort -- the power purchasing agent, simply put. The matter of power purchasing leads directly to the next issue, that of the long-term financial viability of community choice aggregation programs.

Financial Viability

A fundamental issue facing the state's policymakers concerns the long-term financial viability of community choice aggregation programs to fulfill their

procurement obligations to serve their customers. The California Energy Crisis, in 2000-2001, was precipitated, in part, by the extreme run-up of wholesale electricity costs, which strained the financial capabilities of the investor-owned utilities to pay their supply obligations to keep the lights on. The utilities' financial crisis, in turn, caused a fiscal crisis for the state when it had to step in to purchase electricity on behalf of the utilities' customers, when the utilities were teetering on the brink of insolvency (Sweeney, 2002). As previously noted, community choice programs operate under a joint powers authority. This arrangement is designed to insulate the city or county governments' general fund from financial liability for the power purchase obligations assumed by the CCA. In fact, CCA program revenues go straight to a "lock box" to pay power purchase costs first, before funds can be used for other purposes. The investor-owned utilities, in contrast, have the balance sheets necessary to finance power purchases and to finance the programs in support of achieving the state's ambitious energy and environmental goals, such as the renewable energy and the other goals laid out in the Energy Action Plan. The question remains open as to whether individual community choice aggregation programs will be credit worthy counter parties to fulfill their power purchase obligations.[112]

[112] The charter governing a Joint Powers Authority is designed to insulate the tax revenues and financial assets of each city and county government JPA member in the event of a default. Thus far, only Marin Clean Energy (MCA), which operates in Marin and adjacent counties, among the California CCAs, has a bond rating. Moody's Investors Service, in May 2018, assigned a first-time Baa2 rating to MCA.

With respect to the issue of resource adequacy, the independent power producing community continues to argue that long-term, bilateral supply contracts or a multi-year forward capacity market, which fairly compensates generators for the value they provide to the system, are needed to keep generators in business to guarantee reliable supply. Generators are paid for the energy they provide or for their ability to supply electricity when needed. A capacity market is a mechanism to provide generators a payment for the ability to supply power, whether called upon or not. Capacity market are designed to ensure local or system-wide reliability and to encourage investment in new plant or to replace older inefficient generate units with more flexible units or with preferred, i.e. renewable, resources. California has long debated creating a capacity market, but, for now, has chosen not to do so. Other regions in the country have functioning capacity markets. For example, the New York Independent System Operator (NYISO**)**, which covers the state of New York; the New England Independent System Operator (NEPOOL or ISO-NE), which covers Maine, Massachusetts, Rhode Island, and Connecticut; and the Pennsylvania, Jersey, Maryland, Interconnection (PJM)**,** which covers Pennsylvania, Maryland, New Jersey, Delaware, the District of Columbia, and parts of Ohio, Illinois and Michigan, all have a functioning a capacity market. Market uncertainty discourages new investment.

Demographics may prove to play a decisive role in assuring the long-term viability of the community choice aggregation business model. In some California communities, such as Marin County, with its affluent and politically liberal

population that desires renewable energy and can generally afford the higher costs associated with progressive social programs, CCAs may thrive. So, too, in other communities that either have a strong and diverse economic base or are fortunate to be well endowed with a thriving local economy, such as the Silicon Valley with its high tech industries. The same may not be true in other parts of the state.

California's economy is still strong despite its high cost of living and high tax rates, and despite the may social ills it faces, such an insufficient supply of affordable housing, transportation, homelessness, and growing disparity in wealth and income. Can the state solve these social problems as it moves aggressively to pay the cost of combating the effects of climate change by greening the economy? Some experts, and the public at large, believe that the state cannot afford not to. Based on past experience, it remains to be seen whether the bureaucratic regulatory process can keep pace with market and technological advancements to facilitate an orderly process, as customers seek ways to control their own energy supplies with renewable resources, energy storage, community-scale micro grids, and other distributed energy technologies that may liberate them from the control of utility. The deliberative policy making process is not nimble. Politics is a clumsy business.

Wither the Regulatory Compact?

What, then, will become the fate of the regulatory compact? One answer to this question may be that the traditional regulatory paradigm and the regulatory compact are no longer compatible with the evolving energy market and the economy of the

future. California has taken a one-step-forward, two-steps-back approach when the commission, in the early 1990s, first laid out alternatives strategies for market and regulatory reform in the Yellow Book. The reforms advanced by the Blue Book that ultimately led to competition in both wholesale and retail markets, in generation and energy service delivery, were met by organized structural interests that managed to steer the policy debate and influence the outcomes of reform. The failures of California's experience with market and regulatory reform weigh heavily on the minds of today's policymakers. Nobody in government, or industry for that matter, wants to bear the responsibility for another debacle. Yet, inaction -- the failure to act -- as much as deciding a course of action, can lead to stalemate, or worse, failure and crisis.

In the absence of a clear vision and a plan to move forward, bureaucracies will tend to revert to the status quo. The post-energy crisis regulation of energy efficiency and renewable energy goal achievement, as we observed, led California's regulators to adopt tighter control over the actions of the utilities and the other load serving entities. This type of regulatory command-and-control may prove to be unworkable for the market of the future, but, counter intuitively, may turn out to be a panacea for the regulators. Should the state choose to create a centralized power procurement agency, the utilities, community choice aggregators, direct access providers, and other load serving entities would effectively be placed on equal footing, which would enable them to manage their resource adequacy and power purchase requirements independent of strict regulatory scrutiny by the CPUC.

This approach may prove to be a workable model to the extent that the regulators are willing to relax their control by providing the load serving entities with clear but broadly stated goals, thus avoiding overly prescriptive mandates and micromanaging how each load serving entity achieves its goals. For example, if the goal is to achieve a certain percentage of renewable energy supply, regulators should allow load serving entities to determine what resources to procure to balance their respective portfolios to meet the needs of their customers, without mandating specific percentage carve outs by technology type or by dictating procurement plans. Or, if the overarching goal is to achieve a certain percentage reduction in carbon emissions, one approach would be for regulators to allow each load serving entity to chose the appropriate path to meet such goals in a way that best serves its constituents. For some load serving entities the approach might be increasing energy efficiency; for others it might be procuring additional renewable resources; and for others still it might be adopting new technologies, accelerating electrification in new building construction, or creating locally controlled micro grids. Another approach might be to create public-private partnerships with automobile manufacturers to accelerate the pace of electric vehicle market penetration and electrification of the transportation sector. One means of achieving this social goal would be to afford the load serving entities the opportunity to invest in the infrastructure for electric vehicle recharging infrastructure, with or without ratepayer subsidies. Stated another way, regulators may need to shift their paradigm away from command-and-control and micromanagement of programs to setting overarching goals and allow the market to

decide. If the ultimate societal goal is to reduce greenhouse gas emissions, it may be preferable to set a scientifically-based target and let the market work, rather than devise a program by bureaucratic means and manage implementation through regulation. There will still be a role for regulators to monitor and report progress and to enforce compliance. This approach may be an anathema to regulators whose job it is to regulate. But, so long as the agreed-upon target is met, there may be no compelling reason for a single regulatory authority to dictate the means to the end.

The strength of the regulatory compact has been weakened since the introduction of competition in the modern era, beginning in the late 1970s. Historically, as long as the regulator held up its end of the social bargain and fulfilled its rate setting and economic function by providing a sufficient revenue stream to the utility to cover its operating costs and earn a reasonable return on its investment, thus ensuring that it remained a financially viable enterprise, the utility's balance sheet could be counted on to pay for the social programs imposed by legislation and regulation to the benefit of consumers and society as a whole. However, those economic fundamentals are changing. Competition, resulting in departing customer load, the emergence of new suppliers in the wholesale and retail energy markets, and technological advancements, have eroded the utilities' financial capabilities and have undermined their capacity to continue to furnish a social safety net. Furthermore, the emergence of community choice aggregation and a new hybrid electricity market indicate a fundamental transformation of the traditional relationship between government regulation and the regulated energy utility.

The regulatory compact, nevertheless, has shown remarkable endurance. If California is to succeed in achieving its ambitious energy and environmental goals, the regulatory agencies and the utilities will inevitably be inextricably linked. Barring a fundamental paradigm shift, the utilities will remain the principal institutional instrument through which energy policy will be carried out by the state. The public and the private will remain partners entwined in this social enterprise for the foreseeable future.

Yet, in the absence of a comprehensive national or statewide energy strategy, California regulators seem to be able only to focus on what they understand from experience and to address only those issues that they believe they can control. The commission's customer choice project's emphasis on *affordability*, *reliability*, and *environmental sustainability* are the core elements of a workable strategy. The Energy Action Plan may still serve as useful blueprint and policy guide, but it is not a roadmap directing a means to the end. The question remains, therefore, whether California will learn from the past and chart a successful path forward or drift into another crisis. As Karl Marx famously stated, "History repeats itself, first as tragedy, second as farce." [113] What will be California's fate? Only time will tell.

[113] T*he Eighteenth Brumaire of Louis Bonaparte* (Tucker, 1974).

APPENDIX

LIST OF ACRONYMS

AC	Alternating Current
ACWA	California Water Agencies
ADR	Alternative Dispute Resolution
AFSME	Association of Federal State County and Municipal Employees Association
ANG	Alberta Natural Gas Company
ANWR	Arctic National Wildlife Refuge
A&S	Alberta and Southern Gas Company
AReM	Alliance for Retail Energy Markets
AWEA	American Wind Energy Association
BPA	Bonneville Power Administration
CAC	Cogeneration Association of California
CAFE	Corporate Average Fuel Economy
CAISO	California Independent System Operator
CalEPA	California Environmental Protection Agency
CARB	California Air Resource Board
CCA	Community Choice Aggregation
CCC	California Cogeneration Council
CEC	California Energy Commission
CEERT	Center for Energy Efficiency and Renewable Technologies
CEQA	California Environmental Quality Act

CETF	California Emerging Technology Fund
CFEE	California Foundation on the Environment and the Economy
CLECA	California Large Energy Consumers Association
CMA	California Manufacturers Association
CMTA	California Manufacturers and Technology Association
CMUA	California Municipal Utilities Association
CNA	California Nurses Association
COS	Cost of Service Regulation
CPI	Consumer Price Index
CPUC	California Public Utilities Commission
CTA	California Teachers Association
CTC	Competitive Transition Charge
DA	Direct Access
DAC	Direct Access Coalition
DC	Direct Current
DOE	U. S. Department of Energy
DRA	Division of Ratepayer Advocates
EAP	Energy Action Plan
ECAC	Energy Cost Adjustment Clause
EDF	Environmental Defense Fund
EIA	U. S. Energy Information Administration
EIR	Environmental Impact Report
EPA	U. S. Environmental Protection Agency
EPACT	Energy Policy Act

EPCAT	Energy Policy and Conservation Act of 1975
EPUC	Energy Producers and Users Coalition
EOB	Electricity Oversight Board
ERAM	Energy Revenue Adjustment Mechanism
ESCO	Energy Service Company
ESP	Energy Services Provider
EWG	Electric Wholesale Generator
FCC	Federal Communications Commission
FERC	Federal Energy Regulatory Commission
FPC	Federal Power Commission
FTC	Federal Trade Commission
GDP	Gross Domestic Product
GHG	Green House Gas
IBEW	International Brotherhood of Electrical Workers
ICC	Interstate Commerce Commission
IEPA	Independent Energy Producers Association
IEPR	Integrated Energy Policy Report
IOU	Investor-owned Utility
IPP	Independent Power Producer
IRP	Integrated Resource Plan
ISO	Independent System Operator
ISO-NE	Independent System Operator - New England
ITC	Investment Tax Credit
JPA	Joint Powers Authority

LADWP	Los Angeles Department of Water and Power
LSE	Load Serving Entity
LTP	Long-term Plan
MCA	Marin Clean Energy
MOU	Memorandum of Understanding
NCF	National Civic Federation
NEPA	National Environmental Policy Act
NEPDG	National Energy Policy Development Group
NGO	Non Governmental Organization
NOAA	National Oceanic and Atmospheric Administration
NRC	Nuclear Regulatory Commission
NRDC	Natural Resources Defense Council
NRF	New Regulatory Framework
NYISO	New York Independent System Operator
NYMEX	New York Mercantile Exchange
NEPOOL	New England Independent System Operator
OPEC	Organization of the Petroleum Exporting Countries
ORA	Office of Ratepayer Advocates
PBR	Performance Based Regulation or Ratemaking
PG&E	Pacific Gas & Electric Company
PGT	Pacific Gas Transmission Company
PIER	Public Interest Energy Research Program
PJM	Pennsylvania, Jersey, Maryland Interconnection
PMA	Federal Power Marketing Agency

POU	Publicly Owned Utility
PBR	Performance-based Ratemaking
PTC	Production Tax Credit
PAO	Public Advocates Office
PURPA	Public Utility Regulatory Policies Act
PX	Power Exchange
QF	Qualifying Facility
RA	Resource Adequacy
R&D	Research and Development
REA	Rural Electrification Administration
REC	Renewable Energy Credit or Certificate
RPI	Rate of Inflation
RPS	Renewable Portfolio Standard
SAM	Supply Adjustment Mechanism
SEIU	Service Employees International Union
SMUD	Sacramento Municipal Utility District
SCE	Southern California Edison Company
SCPPA	Southern California Public Power Authority
SDG&E	San Diego Gas and Electric Company
TMI	Three Mile Island
TURN	The Utility Reform Network
TVA	Tennessee Valley Authority
UCAN	Utility Consumer Action Network
WAPA	Western Area Power Administrations

WEPX	Western Power Exchange
WSPA	Western States Petroleum Association
X-Factor	Economic Measure of Efficiency

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