Towards Evaluation of Deregulation: Market Experiments vs. Guided Markets -- Implications for Energy Policy

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ABSTRACT

California led the way in the experiment of state deregulation of electrical energy supply in 1996, and several other US states have implemented variations on this public experiment. All fail to include systematic evaluation as an integral component.[1] This key policy failure results in reliance on ideological belief rather than on measurement and evaluation.[2] In this study, deregulation claims are used to develop a brief statement of the theory of deregulation. The theory is first stated, and then expressed as a logic model. Components of the model are discussed in terms of immediate, intermediate, and long-range goals and with application to four customer classes. The result is a critical assessment that can be used to begin to assess the deregulation program in its variants across states. The goal is to encourage direct involvement of the evaluation community in assessing the current electrical energy supply experiments.[3]

Introduction

State deregulation of electrical energy supply may be viewed as a set of experiments.[4] These experiments show variation across the states and new varieties may emerge. Also, as in California, problems encountered will lead to social learning and ongoing modification of the state-level experiments. Somewhat less than one-half of US states may eventually adopt some version of deregulation,[5] but all exhibit a type of government failure in that they fail to include a systematic and critical evaluation component. Evaluation can catch problems quickly, and also highlight contrast

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[1] Early deregulation pilots (of pseudo-markets where prices were administered and/or subsidized to create the appearance of a free market) had rudimentary evaluation, usually a survey. Also, some deregulating states employ evaluation on an ad hoc basis, for example to study effectiveness education efforts. To date, no formal, comprehensive and systematic evaluation component that could feed back critical information on failure of essential program theory or assumptions has been attached to a state deregulation.

[2] As a policy program, deregulation has excluded systematic evaluation.

[3] We want to encourage studies that are fully open to discussion and peer review, and which are conducted from diverse perspectives. In the absence of a vibrant engagement in studies and critical review within the evaluation community, market advancement efforts by the Center for the Advancement of Markets (CAEM) have filled the void. CAEM promotes deregulation with free distribution of sponsored proprietary market advancement research to commissions and media.

[4] Advocates usually deflect attention from the experimental nature of electricity deregulation.

[5] The Energy Information Association (EIA) website lists states in which restructuring has been enacted or ordered (www.eia.doe.gov/cneaf/electricity/chg_str/regmap.html). However, serious re-evaluation is now underway in North Carolina, Nevada, Arkansas, Oregon, Oklahoma, New Mexico, Montana and West Virginia as well as in California – a development that the EIA categorization was not designed to anticipate. Until revised, the EIA categories are not adequate. This is an example of how quantitative information can be slanted through the selection of categories according to promotional interests.

between goals and performance in the case that deregulation fails, so policy can be quickly modified before great harm is done. Evaluation could serve as a vital aspect of this evolutionary process and greatly assist policy-makers.

Viewing the individual state implementations of deregulation of electric energy supply as experiments follows the perspective of the classic essay on "Reforms as Experiments" Campbell (1969):

> The United States and other modern nations should be ready for an experimental approach to social reform, an approach in which we try out new programs designed to cure specific social problems, in which we learn whether or not these programs are effective, and in which we retain, imitate, modify, or discard them on the basis of apparent effectiveness on the multiple imperfect criteria available.

Yet, as Campbell notes, systematic and critical evaluation may not be included as an integral component of social reforms. He points to two factors that give rise to what we call the *decoupling of social intelligence from social reform*: overstatement and fear.

Overstating potential benefits is an understandable error of advocacy,[6] as is exaggeration of the weakness of policy and institutions to be replaced.[7] Fear stems from anticipation of the personal consequences of failure. A reform that excludes systematic evaluation prevents collection of data, prevents appropriate analysis of data, narrows the scope of analysis so that critical results cannot be developed and articulated, prevents timely feedback of information on critical failures, and results in promoting a political haze of fuzziness and ambiguity.[8] According to Campbell,

> ...most administrators wisely prefer to limit evaluations to those the outcomes of which they can control.... Ambiguity, lack of truly comparable comparison bases, and lack of concrete evidence all work to increase the administrator's control.... There is safety under the cloak of ignorance.

To help couple social intelligence to social reform, Campbell suggests two orientations, for evaluators and administrators:

- *Highlight the problem, not the means.* Here, for example, the problem would be the price of electricity, and deregulation is only one of several possible means for accomplishing that goal. A focus on the problem of lowering price would help commissions disentangle from free market rhetoric when deregulation fails and the public experiences the consequences of market failure. Here, deregulation is just a tool – if it breaks, or its use threatens public welfare, deregulation should be put down and the next tool picked up and used. A focus on the problem rather than the

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[6] In initial rhetoric, deregulation was to provide a bounty of "free market" benefits to everyone, not just to oligopolistic generation owners and large industry. For example, in New York the deregulation plan for Con Ed was envisioned to lower electricity costs to large manufacturers by 25%, to large commercial companies by 10%, and to residential and small business customers by 3.3% over five years (2003). See Flowers, 1998, Pp. 22-23.

[7] The early deregulation movement worked to undermine Demand Side Management (DSM). Similarly, according to Vice President Cheney, "Conservation may be a sign of personal virtue, but it is not a sufficient basis for a sound, comprehensive energy policy." ("U.S. Scientists See Big Power Savings From Conservation," *The New York Times*, May 5, 2001.) This, in spite of the findings of a recently released 3-year study on conservation by the national laboratories in which it was determined that aggressive federal conservation policies could reduce the growth of electricity demand through the year 2020 by 45.2% to a consumption level below that of 1997.

[8] The authors of this paper were, for example, instructed not to use the words "California" and "West Coast" in a draft evaluation report for a non-California energy agency following the onset of the deregulation crisis in California.

means embraces a model of sequential attempts at solution – careful, incremental reform. For an experimental administrator, critical evaluation is an asset that couples social intelligence to social problems.

- *No ad hominum.* With a few exceptions, we assume advocates of deregulation and those who have to administer it as part of their work roles are well intended. As a practical matter, the commissioners and staff responsible for administration are often not the original policy entrepreneurs of deregulation. They are the people responsible for modifying reforms, as problems arise.

Knowledge is social rather than individual, thus it is important that the evaluation community engage these issues *from several perspectives*, in pursuit of truth. It is through *praxis* – the dialectical progression of experimentation and critical reflection within a free speech community that we find the best bet for finding truth about reforms. More fundamentally, it is only through the pursuit of truth within a free speech community that we can hope for a sane society, social and economic democracy, the unfolding and enhancement of human potential, or survival.[9] If deregulation had been approached from the perspective of social democracy rather than an authoritarian perspective, these features would have been built-in, and it is likely that any deregulation experiments authorized would have been more conservative and careful.

Background

In the summer of 2000, when the price caps came off, San Diego experienced a tripling of electric rates for all but the large industrial sector. In New York City, residential summer rates went up 43% and the situation is expected to be more severe in the summer of 2001. A series of counter-intuitive measures associated with deregulation has almost eliminated the highly developed and approximately democratic least-cost planning tools, previously so useful in preventing the emergence of problems in natural gas and electricity supply.

Over the winter and spring of 2000-2001, California experienced rolling blackouts and over an approximately one-year period, electric rates are projected to rise over 60%. On May 9, 2001 a new record price for wholesale electricity on the California market came in at $1,900 per mWh. Typical pre-deregulation wholesale costs were $30, an increase of 6,300 percent. By any definition, this is an example of market failure. Many questions are being raised regarding market failure, government failure, market power, and regarding the wisdom of relying on the market rather than least-cost planning, cost-based generation, and economic dispatch. The evaluation community needs to enter the discussion of the deregulation experiments and provide databased empirical assessments on criteria relevant to public welfare, so that intelligent policy modification can be developed. This study is intended to contribute to mobilizing discussion.

The public utility commissions in deregulation states have issued statements indicating why their deregulation experiments are different from California's. That is, they portray California deregulation not as a market failure but as a flawed deregulation (a government failure – in this perspective the

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[9] This is an expression of evolutionary epistemology, the philosophy underlying the role of evaluation in "The Experimenting Society" (Campbell, 1971). For the roots of this theory in the tribal model, see Campbell (1979, 1982). For a critique of pursuit of truth, see Dunn (1982). For the essential nature of the free speech community, see Habermas (1971). For a synthesis, see Dunn (1998).

market was not give a fair chance).[10] At the same time, in those same states, prices of energy supply are rising. At times of tightness in supply, deregulated markets are drawing supplies from adjoining states, so that price increases are transmitted as regional phenomena. The price shocks are severe along the West Coast and among states bordering California. Large industrial firms have also been surprised by sudden price shocks as they attempt to renegotiate supply in a market conditioned by supply shortage. In the Northeast, the price inflation is more moderate but the basic pattern of the supply curve appears the same. The problems with deregulated electricity supply unfortunately coincide with severe infrastructure constraints in the gas supply markets and an approaching need to replace much of the water supply infrastructure in the older states of the Northeast. These problems are likely to interact with each other, compounding in severity.[11]

Meanwhile the overall economy appears headed for a deflationary recession. Given the continuing energy price shocks, the recession is likely to be accompanied by significant inflation induced throughout the economy by rising energy prices. The energy crisis is likely to turn cyclical recession into a more difficult stagflation.[12]

Scope

The scope of the study is limited to the development of an approach to evaluation of deregulation experiments. The approach is put forth not as conclusive, but as a set of essential evaluation steps with the goal of stimulating open and critical discussion. The goal is to encourage discussion and application of evaluation methods to all of the deregulation experiments, from multiple perspectives and within a "free speech" social democratic framework within the evaluation community.

Method

The method for evaluation of the state-level deregulation experiments is to (1) collect claims associated with the reform (2) from these claims, develop a concise description of the theory of the deregulation program, and (3) express the theory of the program in a causal logic model. Use of this standard evaluation approach for evaluating the deregulation experiments also requires explicit

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[10] Many analysts would characterize the situation in California as the result of a profound policy failure (government failure) rather than any failure of the market. However, actual energy markets deregulated or not, have only the slightest resemblance to the ideal market of economic theory. Since deregulation was falsely premised, market failure had a probability near one before the experiments commenced.

[11] Introducing the necessary conditions for possible systems collapse.

[12] A deflationary economy is characterized by downsizing, merger, and competition on price in a context of gross overproduction across sectors (Shilling 1998). The signs of deflation are all about us, as empty storefronts appear in shopping districts and malls, major technology companies slash prices for their products while laying off workers, auto companies offer interest free loans, consumer debt is at record levels and the personal savings rate has touched the level at the bottom of the Great Depression. Prices, however, are not decreasing yet. The recent energy inflation and Federal Open Market Committee (FOMC) cuts should be creating considerable inflationary pressure in the costs of goods and services, as is now occurring in Europe. The U.S. deflationary economy will prevent price inflation as consumers refuse to purchase at higher prices. This is clearly described by Fed Chairman Alan Greenspan in a recent address to a monetary conference in Singapore, "What we see...at this moment is a very extraordinary lack of pricing power in the American economy, which means in effect that the cost increases are not following through into significant pressures on prices but rather on profit margins." "T-Bonds Jump, Greenspan Quells Worries," Ross Finley, Reuters Newswire, June 4, 2001.

definition of key concepts. These are (1) market failure, (2) government failure, (3) the "ideal" competitive market, and (4) the predatory market, and (5) the "guided market." Although the definitions provided here are based on considerable research, each is provisional and could be improved by critical discussion. Of these, the first two (market failure and government failure) are parallel concepts – they highlight the contrast between the ideal and the real.

Market Failure

Market failure has a specific meaning in economic and policy analysis:

> Market failure...refers to the inability of a market or system of markets to provide goods and services either at all or in an economically optimal manner. Market failure is...defined exclusively in terms of economic efficiency in general and allocative efficiency in particular. ...[T]he market failure paradigm can be extended to include distributional or equity elements.... (Wallis & Dollery, 1999, P.16)

Six types of market failure are generally recognized in the economics literature, and we here extend the definition by adding a seventh and an eighth (Table 1). When any one or more of these types of market failure occur, the ideal market of Economics 101 with its consumer friendly features is distorted – sometimes monstrously distorted.

Table 1. Types of Market Failure (Tailored to Energy Markets)

Type of Failure	Description
(1) Market not competitive	A market takes a monopolistic or an oligopolistic form, rather than the "free market" of many sellers and many buyers.
(2) Externalities	Social costs are not captured by market prices.
(3) Inability to Supply	"Public goods" entail non-excludable consumption and non-rival consumption
(4) Incomplete markets	A market fails to serve some market sectors.
(5) Incomplete information	A market tends toward poor choices.
(6) Business cycle failure	A market fails to supply during periods of recession or economic depression.
(7) Ethical failure	A market fails to promote equity of access and equity of results.
(8) Energy failure	A market works counter to net energy analysis criteria.

The elements of market failure are observable and subject to empirical test. As noted, the first six are the standard categories. The seventh was a central feature of economic thought and government action from roughly the era of the Great Depression of the 1930s through the early 1970's. It

incorporates the central ideas of mutual reciprocity, social justice, equality of opportunity, and responsibility for the social welfare of individuals, families, and the people as a collective in history as criteria for market failure.[13] The eighth is the "embodied energy analysis" approach restored here for energy concerns from the environmental accounting literature.[14] Failure of *any one or more* of these market requirements *invalidates* the "free market" theory, along with the "competitive market" political rhetoric used to propagandize in favor of deregulation.

Government Failure

Just as the literature on market failure begins with the understanding that the *ideal* market of Economics 101 rarely exists, writings on government failure begin with the recognition that the *actual* "State" -- that is, any of the US states considered individually (e.g. California, New York, Pennsylvania) or the US national state -- is not the *ideal* state of democratic theory. In reality, state institutions (*e.g.,* State regulatory authorities, the Federal Energy Regulatory Commission) are at the nexus of crosscutting interests. This means that enlightened civil servants are not simply free to serve the people, but are surrounded by powers and interests that constrain their thought and action, boxing them in. In Marxist "theory of the state," the state is an arena in which classes and interest groups struggle for control of state institutions. In Marxist theory the outcome of this ongoing struggle in the actions of state institutions by and large (but, not always) reflects the interests of the dominant class of a socioeconomic formation. Neoliberalism is our current socioeconomic formation. Therefore, outcomes would favor those elements of society who share interest with global corporations, regardless of the social welfare costs to the people, small business, service institutions, etc. Marx's approach is skeptical but not cynical – it does not undermine the goal of good government, and views the struggle for control of state institutions as worth the effort. At times, even individuals can be effective -- Marx notes that, here and there, and in particular environments, independent civil servants (as in the case of factory inspectors) are able to do their jobs, conduct sound analyses, and issue useful reports regardless of the ruling ideology and dominant interests of the day.

Current literature on government failure shares this orientation – it contrasts the ideal state and the image of free citizens as civil servants with actual conditions in state institutions. In place of the class struggle, these theories pose that a general "problem of interest" is the root cause of democratic failure. The best known is the Chicago School theory of "regulatory capture." In this theory, state public utility commissions would be seen *historically* as generally serving the interests of traditional monopoly utilities. Also, FERC would be seen *currently* as serving the interests of the global energy companies that are intent on weakening traditional regulation, repeal of the Public Utility Holding Company Act[15] and creation of a national market in electricity. In this view, civil servants at FERC are currently prevented from exercising their critical intelligence and technical expertise by the controlling influence

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[13] We incorporate as market failure, from a common sense perspective, the understanding that "...the outcomes of competitive markets, even when they are efficient, may not be socially desirable or acceptable." Samuelson & Nordhaus, 1998, P. 274.

[14] Odum, 1996.

[15] This reality cannot be more clearly shown than by the reported influence of the nation's largest energy trader, Enron's Chairperson Kenneth Lay, in the development of the National Energy Plan, as well as his involvement in the process of interview and selection of Federal Energy Regulatory Commission (FERC) commissioners. "In an Era of Deregulation Enron Woos Regulators More than Ever." Bob Davis & Rebecca Smith, *Wall Street Journal*, May 18, 2001. "Power Trader Tied to Bush Finds Washington All Ears." Lowell Bergman & Jeff Gerth, *The New York Times*, May 25, 2001.

of industry-screened commissioners – they are constrained to support only industry interests (national deregulation).[16] Types of government failure are listed in Table 2.

Table 2. Types of Government Failure

Type of Failure	Description
(1) Class interest failure	State tends to reflect capitalist class interest, over worker, consumer interests; State surrenders policy control to owners of large industry and "free traders" or what today we would call "globalization" (Marx 1967)
(2) Predatory state	State is only a formal democracy, and lacks effective accountability to civil society; accordingly it serves elite interests (Machiavelli, Hitler, Stalin, etc.)
(3) Regulatory failure	Industry "captures" the regulatory agency and key staff Stigler (1971).
(4) Political failure	Public lacks knowledge of shortcomings of market approaches, overly propagandized with pro-market orientations; fails to mobilize (Wolf 1987)
(5) Legislative failure	Legislation favors special interests over social welfare.
(6) Judicial failure	Judiciary overrun with cases, far outstripping resources (Heydebrand & Seron 1990). Significant portion of judiciary captured by ideology resulting in decisions that fail to support common social welfare.
(7) Enforcement failure	Enforcement agencies understaffed, underpaid, overworked. Climate in which laws or commission orders selectively enforced or not enforced to the extent that they impinge on the interests of powerful parties.
(8) Bureaucratic failure	Regulatory agencies understaffed for workload, pay set too low, staff forced into relation of dependency and encouraged in "self seeking" rather than public service. Technical knowledge and critical insights repressed, lack of strong evaluation components to programs.
(9) Measurement Failure	Government produces non-market outputs without integral measurement and evaluation mechanisms. A government reform is introduced without a way to indicate failure or to stop the reform if it produces unsuccessful results. (Wolf 1987)

Evaluators and program advocates for and against deregulation should think through these types of market and government failures. Evaluators need to discuss and assess which types of failure are

[16] Thus a "veteran agency economist" at FERC notes that the FERC staff is "impotent in our ability to monitor, foster, and ensure competitive electric power markets." Further, "[t]he staff...did not even enforce a requirement that power companies file detailed quarterly reports listing essentially every sale they make." Similarly, the agency failed to examine data required to understand market gaming, refocusing, instead on "critical hours." "Critics Say U.S. Energy Agency is Weak in Oversight of Utilities," by Jeff Gerth & Joseph Kahn, New York Times, March 23, 2001.

occurring. This study presents one perspective, but further discussion from multiple perspectives is essential to fully develop a critical understanding of deregulation.

The "Ideal" Market ("The Market")

At several points in this study we employ the ideal market of Economics 101. The essential point is that a competitive market cannot be asserted – it must be demonstrated. The competitive market, in a state of transition from the guided market, would be evidenced by a continual adjustment of supply price towards the marginal cost of production. In elementary theory, "The Market" is an ideal form that provides a legitimation for capitalist as opposed to social democratic systems. The assumptions of the free market are:

(1) Ease of entry into production
(2) Price structure that faces all firms equally
(3) Easy factor mobility
(4) Equal access to information and technology
(5) No product differentiation
(6) Numerous producers so that none may exert market power
(7) Aggregation of suppliers, by collusion or gaming, is preventable
(8) As economic and political entities, buyers, workers, sellers, and owners of the means of production have roughly equal access to resources and are of roughly equal economic and political power.

Under the "Free Market System" efficiency is encouraged, goods are directed to consumer preferences, profit serves as an incentive for productive effort, profit is removed and price is subjected to competitive stresses, and price is reduced to actual marginal cost as consumer demand is met. In this study, we stress the *theoretical* nature of this system, which exists at the level of appearances but is used to justify actual systems that are quite different in operation. This is perhaps best done by noting a standard pattern in "economist jokes" (Table 3).

Table 3. The Assumptions of Economists

How many mainstream economists does it take to change a light bulb? Two, one to assume the ladder and another to change the bulb.
An economist is a person who, confronted with an eight-foot high wall immediately assumes he is ten feet tall. -- John Zanetti, Sr. Lecturer, Victoria University, Wellington, NZ, 1971
A physicist, a chemist, and an economist are stranded on an island with nothing to eat. A can of soup washes ashore. The physicist says, "Lets smash the can open with a rock." The chemist says, "Lets build a fire and heat the can first." The economist says, "Lets assume that we have a can opener." -- Paul Samuelson

The parallel to these economist jokes (Table 3) in the area of electricity deregulation would be the economist who assumes a competitive market when deregulation may actually be just one step in a

political movement to repeal the Public Utility Holding act, justify public funding of a national transmission system analogous to the interstate highway system, and to replace local or regional ownership with a handful of national companies offering empty choices at higher prices.

The Predatory Market

The Predatory Market is old-style capitalism. It implies a system of market manipulation, in the absence of regulatory safeguards, for the purpose of removing competition. Merger, downsizing, abusive workforce management and reductions in the general public welfare typify it. As the ideal market serves consumers the Predatory Market reduces consumers and consumes workers. The modern predatory market goals are currently being furthered through the policy of neoliberalism, the gradual weakening of the social and economic infrastructure of regions, allowing outside control in a form of "neo-feudalism". Case in point, the predatory market is typified by the wealth transfer mechanism developed through the California deregulation experiment. The implementation of predatory market structure is of vampiric corporations influencing elected officials and their appointees to privatize the mechanisms for the development and the application of the social welfare.[17]

The Guided Market

A guided market is a market in which the play of market forces is restrained by strong enforcement of "tough" rules aimed at ensuring social welfare. Typified by the social democracy systems implemented in Northern Europe prior to the current global deregulation movement. This system combines the strengths and flexibility of the market with the assurance of social welfare across all sectors. Wealth accumulation is gradual to ensure more equitable wealth distribution. Social democratic concerns and the needs of civil society outrank the goal of profit maximization.

Results

The first, initially surprising, finding of this study is that the program theory of deregulation has been very poorly articulated. Indeed, a thorough search of the commission websites and promotional literature of the states provided almost no logic justifying the implementation of deregulation experiments! Of course, to be fair, the experiments had been implemented at the time of the search. The focus of information now provided by the commissions is on how to behave in the deregulated setting. Thus, the focus is on providing operational information required by the customer to navigate the new supply situation, not on the critical justification of the experiments. Nevertheless, the first question

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[17] For example, welfare reform that dismantles the social safety net, trade zones such as NAFTA that lower the quality of life and reduce employment in local areas (while lowering prices and level of living, ultimately), privatization of the health system, instigation of the collapse of public health institutions, privatization of prison management, privatization of all forms of civil services, the merger movement, downsizings, weakening of labor unions, introduction of counterinsurgency policing styles, introduction of authoritarian zero tolerance policies in schools, defunding of school counselors, music, art, school libraries, introduction of private playgrounds, etc.

for the evaluation of deregulation is to understand the goals of the program. The second is to be able to articulate the program theory in a simple form. The logic diagram follows from these first two steps.

Lower Price

The primary goal of deregulation was to lower energy prices by providing access to multiple providers who would compete for the consumer's business within a free market.[18] However, a critical review of commission websites and promotional literature reveals that almost no claims for a "free market" were actually made. The statements of commissioners do mention the "free market," but only in the form of a faith-based ultimate ideal. For example, the New York Public Service Commission concluded in 1996 "A market with multiple buyers and sellers offers greater incentives and opportunities for lower prices, greater innovation, and expanded "choice" of options for customers."[19] Nowhere is there cautious analysis that deals with the problem of predatory markets, or seriously engages the need to put into place evaluation and measurement tools to quickly determine if the experiments go awry and show the characteristics of one or more types of market failure. In the promotional materials and information provided to the public, there is no talk of potential failure of deregulation, of the damage deregulation might do to civil society, or of the potential need to abandon deregulation and go to a "Plan B."[20] The commissions failed to develop anything more analytically deep than promotional statements about what would be expected under conditions of the ideal ("The Market"). If the goal is to lower price, there is no "Plan B" or "Plan C" to scrap deregulation and replace it if the market forms produced by the experiments do not approximate "free market" conditions.

It is reasonable to conclude from this lack of articulation that few "in the know" concretely expected anything like the "free market" of Economics 101 to result from the reform! Instead, the burden is placed on the individual consumer to assume the costs of extensive search behavior to acquire and balance information, and to exercise caution in selecting an energy supply company. Further, at least one commission website notes "market price may go up as well as down." So, although the public perception induced by pro-deregulation education and propaganda is that the key goal of deregulation was to significantly lower energy prices, there is only the ghost of a record of any promises in this regard, or of any serious attempt to think through what to do next if deregulation fails. *Further, neither the dangers nor the true long-term costs of deregulation were disclosed to the public by state authorities.* What is missing is Campbell's emphasis on *highlighting the specific problem (here, the goal of lowering prices), not the specific reform (deregulation as a particular and potentially fallible means).* This leaves the governors and the state commissions inappropriately tied to the rhetoric of deregulation, when the public service goal with which they began was to be net lower prices. The measurement goal is on the dimension of price.

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[18] "The goal of deregulation is to get more competition and lower electricity prices." Flowers: 1998, P. 8.

[19] Cases 94-E-*0952 et al., In the Matter of Competitive Opportunities Regarding Electric Service*, Opinion No. 96-12 (issued May 20, 1996). Such statements are tautologies, expressed as matters of faith, and were deployed to motivate deregulation in place of rigorous analysis or social planning.

[20] See Table 2. Government Failure. last row. "Measurement Failure."

"Choice"

Currently, the key feature of deregulation that is emphasized by each commission is "customer choice." Instead of being required to buy electrical energy and capacity from a single monopoly provider at a regulated rate, deregulation would free customers to find their own generation suppliers in the market. The framework put forth for situating choice was the customer's requirements, including price. However, the feature of the deregulation reform most emphasized does not actually include lower price, but simply the empty "choice" of generation supplier in the abstract. Examples provided include the freedom to choose a green energy supplier at a premium price, or to select from among non-green suppliers who might offer various bundles or packages of services. Moreover, the rhetoric of "choice" is essentially a means of directing perception away from non-market alternatives such as public power that have a distinguished track record in providing lower cost energy.[21] Therefore, the measurement goal, must deal with the question of whether true public choice has been suppressed under the cover of a system that generates a restricted subset of essentially empty (or even involuntary!) choices. Measurement of only "percent switched" (or, worse, reporting of only absolute numbers without referencing them as a percentage of the base populations), though necessary for critical assessment, would not be sufficient.

Transition Rate Caps

Curiously, following the catastrophic failure of deregulation in California, other lead states in the deregulation experiment are emphasizing the transitional rate caps *in themselves* as *a major benefit* of the reform. This is curious, because the transition rate caps were developed through the negotiation process of traditional regulation, not a feature of actual markets – that is, they are a feature of a guided market that attempts to prevent the natural workings of the market from undermining social welfare either for the people as a whole or in particular market sectors. The states followed different patterns in determining rules for pricing of various components (for example, generation, transmission, distribution, social welfare charges) of price during the transition from traditional least-cost regulation to the fully open market. However, in each state experimenting with deregulation some form of transitional rate cap was adopted. In contrast to the terrible wholesale and "spot-market" rate increases in California, the other experimenting states can point to relative stability since their rate caps *currently* remain in effect.[22]

This is also exacerbated by the structure of generation deregulation implemented in California vs. the other experimental states. California has structured a "divestiture" operation of deregulation, separating the generation and distribution holding companies. The other states have implemented an "equal access" form of deregulation where generation companies hold their transmission systems and the regulated transmission charge is bundled with the generation portion of the residential bill. While the "equal access" program may limit true competition by allowing large generation utilities to exist within the structure, it also provides inherent reliability and accountability to the consumer. Electricity is purchased directly from the generators and not from an anonymous generation pool via a distribution utility. On average, California has experienced an 870% increase in wholesale rates upon

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[21] For discussion of "choice" or "retail wheeling" as misleading, see Morris 1998, Pp. 4-5; Hirsh 1999, Pp. 270-271; Wasserman 1999.

[22] Also, because their supply curves though showing the same pattern as California, show it to a much more moderate degree.

implementation of deregulation.[23] *If retail rate caps were not in place, there would be a statewide denial of payment of utility charges as occurred in San Diego during the summer of 2000.*[24] Even in states that implemented an "equal access" approach, the perspective of the public utility commission responsible for its implementation is that, in the absence of deregulation, rates would have risen under traditional least-cost regulation above the current transition rate caps. In Pennsylvania, for example, the first rate caps will come off within a year (Duquesne Light) while the last will come off in 2010. *It is only as the caps come of that the full destructive force of the deregulated market can begin to manifest.*

Caps are generally linked, utility-by-utility, to the final recovery of stranded assets. When the recovery is complete, the rate cap is removed. In California rate caps have become a cold finger in the bursting dike of untenable wholesale rates, which, had they been allowed to pass through directly, would have inspired statewide consumer revolt as in San Diego. Even the rate decrease included under the cap to help cool out opposition to deregulation involves deferring present cost into the future and incurring finance debt that must ultimately be repaid with interest by customers and/or taxpayers. Thus, the rate situation is more complicated than it may initially look: the correct calculation would require estimation of the percent of stranded assets included in rates purely as a result of the deregulation experiment,[25] This would be added on top of the formally capped rates, as would all deferred costs and interest associated with the rate bonds.

Social Benefit Pools

Finally, commissions are stressing systems benefits charges as a positive outcome of deregulation. In each state, as reform was negotiated, advocates of energy conservation, renewable energy, and low-income advocates obtained small additions to energy price that were designated to sustain funding for designated purposes. Although the system differs by state, these include a renewable energy fund, a demand-side management/demand responsiveness fund, research and development, and a low-income fund. In addition, in Pennsylvania, universal service programs offered by utilities were anchored as an obligation of state law and significantly expanded. The theory of the program may is stated in Table 4, based on claims of the deregulation movement:[26]

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[23] "Special Report: How Californians Got Burned – The State Electricity System Is In Shambles, And The Worst May Be Ahead. How Did Things Get To This Point?" *Sacramento Bee*, May 6, 2001

[24] The new rates approved for California violate several traditional rate design principles. *A very high percentage of the billed amounts presented to customers under a "rate shock" rate structure are inherently uncollectable.* It is also obvious that the new rates represent only a relatively *small fraction* of the total cost of deregulation.

[25] That is, the percentage difference between the deregulation driven recovery of stranded assets and the recovery that would have occurred under traditional least-cost regulation.

[26] The authors recognize that this is only a preliminary statement of the theory of the program of electricity deregulation, and welcome critical review and discussion of evaluation colleagues that can result in a series of progressively better statements.

Table 4. The Theory of the Deregulation Program

The Theory of the Deregulation Program
(Eight Goals and Mechanisms)

The theory underlying the deregulation program implies that the following benefits (goals of the deregulation program) will be provided through the indicated mechanisms:

Goal 1: Customer "choice" – By providing wholesale and retail competition, a customer will experience the freedom of choice of energy supplier.

Goal 2: Competitive market -- True competitive forces will drive advancement in efficiencies, supply of goods, and extend the range of services, while significantly reducing retail cost.

Goal 3: Lower prices - Continual decrease in retail rates developed through a process of competitive bidding, driving down retail prices to the marginal cost of production. This will lower operating costs for residential customers, business, industry, and government services, and lead to the creation of more jobs.

Goal 4: Regulatory benefits – (a) Transitional capped rates that may lower the cost of electricity by forestalling increases that may otherwise have been granted over the transition period under traditional least-cost regulation, and (b) social benefits funding for research, renewables, conservation programs, low-income programs, and related improvements in law to protect low-income customers.

Goal 5: Lower Regional Cost differences – Equalize rates between low cost of service and high cost of service areas.

Goal 6: Increased Reliability of Service – Reliability of service is guaranteed through an evolutionary process of natural selection of preferred providers.

Goal 7: A Cleaner Environment – Green choices will be offered for cnsumer choice, competition will accelerate shutdown of old plants and introduction of new cleaner technologies.

Goal 8: Increased Fuel Diversity – Consumers will choose among types of generation, creating a market for each type of supply.

Logic Model

The logic model implementing this theory is presented in Table 5-1 thru 5-9. The components of the logic model should be considered within the perspectives of timing and application across customer classes[27]. With respect to timing we here define the intermediate range to be that period between the second year of operation and the removal of the retail price cap (standard offer). Final goals would be met upon the removal of wholesale and retail price restrictions and the expiration of any special contractual arrangements based on one-time sale of generation and transmission infrastructure.

Accomplishment of immediate goals is almost always directly measurable by the evaluator. For the area of customer "choice", an *intermediate objective* might be maintaining at least a certain number of operating supply companies for each customer segment. Another might be achieving a certain percentage of customers voluntarily switching from their traditional utility to a new energy supplier, or that the percentage gradually increases over time. Intermediate goals are not always measurable through operative indicators. Sometimes measurements (numbers of suppliers, percentages of customers switching) can be direct. Often the evaluator can link directly measured performance on immediate objectives to probabilities that intermediate objectives will be met using the program logic. The documented results are then one of consistency and direction of change. Otherwise, intermediate goal attainment is strictly defined and directly measurable. A long-term goal might be to improve the competitive position of the large industrial sector in global markets by acting to lower energy price to that sector. Another might be to enable low-income families retain self-sufficiency or to become self-sufficient in paying their energy bills by lowering bills to fit family incomes. For *long-term goals*, evaluators almost always have to use program logic and draw inferences based on consistency and direction. All three levels of objectives would be part of a full-scale evaluation.

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[27] Electricity pricing, in the form of rates and bills, apply to at least four classes of customers. These are: large industrial, commercial, residential, and low-income residential. In traditional least-cost regulation, the tensions in assigning pricing among these classes are explicit and usually facilitated by cost of service calculations. In principle, price should be related to cost of service to each class. However, there are several other principles involved in energy pricing. Typically, public purpose principles are also employed in pricing to create an overall balance in a regulatory setting. In this balance, it is typical for the industrial class to consistently receive the lowest price among all classes of customers based on cost of service, yet a higher price than would be indicated by the cost of service analysis alone because other principles are operative. If a state opts for deregulation, the cost of service advantage and low "hassle factor" advantage dramatically favor the industrial class. The large industrial class, and its industrial energy association, ELCON, was the primary movers behind deregulation, along with a handful of free market theory economists who recommended the designs for the various deregulation experiments. The initial advantage for large industry was obvious: preferred access to the cheapest supply prices and an opportunity to swallow the "froth on the beer," the temporary bubble of low-cost electricity that was freed up by ending the need to plan to meet the obligation to serve and through the cannibalization of the capacity reserves required under traditional least-cost regulation. The unanticipated price shock to large industry came after the "froth on the beer" had been swallowed, and the next drink was priced upward by rising wholesale markets, even for the sector best positioned to benefit. The details of the interests of the classes are not within the scope of this study. However, it is clear that the tension among the classes requires separate attention to the situation of each class in evaluating the reform in each state.

Table 5-1. Customer Choice

Logic Model Goal 1: Establish Customer Choice			
ACTIVITY	**INDICATORS**	**VERIFICATION**	**ASSUMPTIONS**
Authorize Competition	Competition authorized by state	Official records	Intelligent deregulation rules
Set Standard Offer	Standard offer	Official records	Adequate offer
Register Competitors	Number of suppliers	Supplier registration	All registered suppliers will serve
Educate Customers	Education contract, activities	Records, process evaluation	"Choices" are meaningful; "Choices" emerge from competition-driven market forces; Customers greatly desire "choices."
Track Changes	Percent customers who switch	Official records	All changes of supplier are voluntary

Customer Choice. All of the activities shown in Table 5-1 represent *immediate* objectives (within the first 2 years). An example of an intermediate objective would be the expansion of "choice" during the period prior to the removal of the rate cap. If the program were working, we would expect this expansion of "choice" to be uniform, increasing and market-driven. Deregulation is premised on the assumption that market-driven forces will promote what they refer to as "choice." Indications of failure would be continuing intervention to promote "choice," and any indication of contraction of "choice", such as withdrawal of newly formed Energy Supply Companies (ESCos), or the introduction of involuntary assignment to customers to alternative suppliers (under the rhetoric of "choice"!). For the long-range (following removal of retail cap), a good checkpoint would be to ensure caps are not removed unless a vibrant market has already been established as evidenced by commodity pricing. An example of a *long-range* objective is a functioning competitive market in all customer classes, and not an oligopoly structure.

Table 5-2. Competitive Market

Logic Model Goal 2: Establish Competitive Market			
ACTIVITY	**INDICATORS**	**VERIFICATION**	**ASSUMPTIONS**
Set market guidelines	Market guidelines established	Official records	Guidelines enforced
Set customer protection	Complaints	Official records, field observation	Customer protection strong & enforced
Administer for each class (residential, commercial, industrial, low-income)	Curtail market power	Monitor market operation	Access & staffing
	Level Playing Field	Observe ISO, suppliers	Access to full information
	Adequate number of suppliers, Significant variation of offers, within each class. Retail competition on price drives price down within each class.	Official records, Interview suppliers, customers by segment	No supplier collusion/gaming of market system; competitive market actually brought into being.
Operate Market	Supply generators under-bid each other on the spot market	ISO bidding records – pattern of declining price	
	No price shocks in market	Public record	Price shock shows market failure
	No requests for rate increases	Public record	Rate increase shows market failure
	Abundant energy supplies	ISO price records	Rising wholesale cost shows market failure
		ISO supply curves	Step-function loss of supply shows market failure
	Aggregators active	Aggregation deals	Lack of aggregators shows market failure
	Market-driven customer shift to ESCos	ESCO enrollment records; official records	Lack of enrollment and LDC incentives to encourage migration to ESCos shows market failure; Involuntary customer shift to ESCos indicates market failure; Market offers meaningful "choices"

	Number of companies in the supply market continually increases	Supplier registration	No transmission bottlenecks; Withdrawal of energy companies indicates market failure
	Market Operating	Price caps rarely activated; Full market information available; Emergency action not required; Regulation not resumed	Market ideal is more or less attainable in practice.

Competitive Market. This is the key goal of the deregulation political movement. Without a truly competitive market, customer "choice" would be a set of empty choices, and prices would not drop. Without a truly competitive market, the underlying theory that supports the belief that deregulation might somehow lead to a cleaner environment, increase fuel diversity, or increase reliability of service operate – the market "mechanics" would simply not "kick-in." The immediate goal would be to set the conditions for the competitive market. The intermediate goal would be the establishment of the competitive market. In the long run, the competitive market would function independent of state intervention.

Table 5-3. Price

Logic Model Goal 3: Lower Prices			
ACTIVITY	**INDICATORS**	**VERIFICATION**	**ASSUMPTIONS**
	Market rates continually bid down	ISO records	Apparent benefit not otherwise offset or reduced; market, not regulatory driven

Price. Lower prices are framed as the primary benefit to deregulation. In theory, if there is a truly competitive market, prices for all customer classes will move lower through the unleashing of market-driven competition and "choice".[28] Clear evidence of sustained long-term downward price pressure indicates that a functional competitive market is germinating and taking the place of the monopolistic market. Therefore, this goal is an indication of the success of the establishment of both customer "choice" and competitive market goals in the *intermediate* term. It would be reasonable to make removal of the retail cap for each company contingent on the existence of a vibrant market with many sellers (a competitive market, not an oligopolistic market), and sustained downward movement in prices for all customer classes.

[28] To clarify: Economic theory would not say that a competitive market will necessarily lead to lower price, only that it will tend toward an equivalence between marginal price and marginal cost of production. We are dealing here, however, with an actual transition from the historical guided market of traditional utility regulation to a new market form. In this context, advocates promised to the public that deregulation would lead to lower prices for all.

Table 5-4. Regulatory Benefits

Logic Model Goal 4: Establish Regulatory Benefits			
ACTIVITY	**INDICATORS**	**VERIFICATION**	**ASSUMPTIONS**
Negotiate & Authorize	Low-income programs	Law & regulatory enforcement	Good administration, no side effects
Negotiate & Authorize	Conservation funding pool	Law & regulatory enforcement	Good administration, no side effects
Negotiate & Authorize	Renewables funding pool	Law & regulatory enforcement	Good administration, no side effects
Negotiate & Authorize	R & D funding pool	Law & regulatory enforcement	Good administration, no side effects

Regulatory Benefits. Regulatory benefits, as defined above, are *immediate*, *intermediate*, and *long-term*. They are a function of the settlement structure for the individual state's "deregulation movement" program and are not market effects. These regulatory-directed programs are provided through the legislative process as an assurance for their continued contribution to the general social welfare. It is unclear whether these programs will benefit in any way from the market-driven innovation structure of deregulation in the long-term. It would be evidence of exceptional variance in customer "choice" if an ESCO was able to secure market capitalization based upon its aggressive

Table 5-5. Regional Cost Differences

Logic Model Goal 5: Lower Regional Cost Differences			
ACTIVITY	**INDICATORS**	**VERIFICATION**	**ASSUMPTIONS**
Regulate transmission-rate discount	Discounts established	Public record	All costs accounted for, all records public and available, without proprietary secrecy. Overcoming price differentials is ethical. Source of regional price differences is in generation part of bill. National competition is ultimate goal of deregulation.
Socialize private utility debt, stranded costs	Public financing of stranded costs completed		
Unbundle bills	Rates unbundled		
Merge high-cost and low-cost state markets into RTOs	RTOs formed then merged		
FERC orders RTOs into defacto national grid	FERC orders		

Demand Side Management (DSM) or low-income programs. Failure of these programs would be evidenced by reductions in measurable program effects through long-term evaluations. Also, a type of political failure would occur if the funding pools negotiated as a price of "signing on" to deregulation

were to divert key conservation, low-come, ratepayer, and research interest groups to a focus on their funding pools, and away from their watchdog roles.

Regional Cost Differences. In the rhetoric of the deregulation movement, regional cost differences were attributed to stranded costs and monopolistic inefficiencies. In the deregulated market the regional costs will not necessarily be uniform but, in theory, would rather be driven by market forces associated with competitive markets and customer "choice" (*e.g.,* costs associated with green power sources) as well as localized or regional cost of service. Therefore the "lower regional cost difference" goal is rather, "appropriate regional cost difference" and will be determined by the market in the terms of "what the market will bear", not associated with regional investments in technology that was not cost-effective or with traditional monopolistic practices such as "gold plating".

Table 5-6. Reliability

Logic Model Goal 6: Increase Reliability of Service			
ACTIVITY	**INDICATORS**	**VERIFICATION**	**ASSUMPTIONS**
Ensure generation levels meet: Peak load + Generation reserve + Commercial reserve	Reliable energy supply, customer activity impact positive	Public record	Public records available, Customer activity impact measurable. Market structure ensures adequate supply to each locality. No rolling blackouts, price gouging, etc.

Reliability. The reliability of service is surprisingly contained within the process of developing a truly competitive market. It has been determined by recent studies in New York and California that a significant excess of generation capacity is required to ensure these competitive market forces will be in play. Tied to this determination is the reality that if significant excess generation is not available, market forces will drive suppliers to restrict their generation by any means necessary.[29] In the energy market it is much preferable to sell fewer units at a much higher rate of return per unit. The process of ensuring reliability of service is to supply large amounts of overcapacity to all service territories. This "commercial reserve" of 47%-52% of pre-deregulation capacity will ensure market supply regardless of deregulation effects.[30] If supply falls, resulting in regional blackouts, then market failure has occurred.

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[29] This feature of the deregulation supply markets was anticipated in several types of economic simulations in which suppliers coordinate to bid up price, with or without direct verbal communication (Davis & Holt: 1993).

[30] A remarkably high level of off-line generation is the subject of continuing lawsuit in California. It is believed that several generation suppliers are removing supply from the market in an attempt to illegally raise spot-market prices. The generators contend that the severe strain of recent overproduction by their facilities has caused mechanical failure. In any event, an evaluation of power reserves over the last 12 months has shown a deregulation-induced removal of 40% of the in-state generation capacity. This amount would be added to any "competitive reserve" required to allow successful competition market forces to bear, as outlined in a recent NYSEG report. (NYSEG: 2001).

Table 5-7. Cleaner Environment

Logic Model Goal 7: Establish Cleaner Environment			
ACTIVITY	**INDICATORS**	**VERIFICATION**	**ASSUMPTIONS**
Establish "green power" choices	Green power offered	Public records	Green power offer affordable to all classes, no side effects.
Establish "green power" certification	Certification supplied	Public records	Certification valid.
Customer driven green power movement occurs	Increased plant diversity, fuel-types change over time, increased renewable capacity	Emissions records, plant records	Renewable preference provides adequate pressure over price pressure
Public pressure on generators via competition drives replacement of antiquated, high-polluting power plants with cleaner plants			Cleaner generation does not require natural gas, burning gas to make electricity makes sense under net energy analysis, NG supply, storage and pipeline structure is ample to support generation shift

Clean and/or Green. The first two activities in Table 5-7 are goals that should follow *immediately* in the implementation of deregulation. That is, within the first two years, "green power" choices should be available to customers in each class on a continuous and sustainable basis. Further, the "green power" choices should be certified by an independent environmental agency.

The third activity fits the *intermediate* range (from the end of the second year until the removal of the retail price caps or standard offers). During this period a "green" movement will show that it either does or does not have the potential to become a meaningful force in driving the ecological values of the generation mix in comparison with least price (but potentially more polluting) alternatives. If the "green choice" movement builds substantially and uniformly during the intermediate period, this result would be consistent with the long-term goal encompassed in the fourth activity of Table 5-7.

For immediate, intermediate, and long-term effects, we would also want to examine the use of the green and/or clean option(s) by class. Are industrial users selecting green power? If not, what is the implication? What percentage of commercial, residential, and low-income and payment-troubled customers are selecting green or clean power? What are the alternatives to deregulation green or clean power for each class? How do these factors come together to affect the environment in contrast to public power or regulated alternatives?

Table 5-8. Fuel Diversity

Logic Model Goal 8: Increase Fuel Diversity			
ACTIVITY	**INDICATORS**	**VERIFICATION**	**ASSUMPTIONS**
Consumer preference-driven diversity	Diverse ESCos increase voluntary enrollment	ESCo enrollment records	Diverse ESCos will develop
Competition-driven innovation produces new technology maximizing efficacy of underrepresented fuels	Plant construction indicates diversity		Customer preference drives diversity, Fuel preference dominates over price preference

Fuel Diversity. Increasing fuel diversity is probably one of the weakest goals of the deregulation political platform. Essentially, the idea is that customers will choose various fuel sources and through the mechanism of the competitive market, these requests from customers will translate, eventually, into a mix of facilities using diverse fuel types. This is probably not a serious goal of deregulation, but a goal "added on" to enhance the persuasiveness of the deregulation program to a small degree.

The *immediate* goal would be to provide an opening for diversity in generation. The *intermediate* goal would be to show that fuel diversity is increasing. It would be important to test performance on a quantitative, not a qualitative basis, and to distinguish market driven generation from "show piece" plants that exist simply to indicate that a giant coal, oil, or gas company is "forward thinking" enough to open a wind farm or a solar plant useful for publicity purposes. The intermediate goal would be dramatically undercut, for example, if 90% of all new plant in construction or on the drawing board were to be gas-fired. The *long-term* assessment would be dependent on the assumption that, quantitatively, in terms of capacity, decisions on fuel are made based on directions from atomistic consumers "casting votes" through market "choices" rather than by engineers and financial specialists trying to deliver results based on price competition. This *long-term* assessment assumption does not pass an initial "straight face" test, and because of the time lag in designing and bringing new plants into production, we already know that *intermediate* range results, to date, are dramatically inconsistent with the goal of fuel diversity.

A Critical Analysis of Assumptions

In general, the logic of the reform is weak, and there are several failures in assumptions that either undercut the usefulness of the indicators or counter the objectives, or both.

Assumptions underlying Customer "Choice"

The assumptions underlying the indicators for customer "choice" require an intelligent approach to deregulation in the authorization for competition by the state. Otherwise customer "choice" may exist in form but not actuality. For example, in New York, initial registrations of alternative suppliers suggested significant opportunity for customer "choice". However, at the second stage of registration, which entailed some financial risk, many of the initial registrants withdrew. Today, commission web sites and lists of suppliers typically contain the disclaimer that the list is a list of registered firms *who may be contacted to see if they will provide service*. Finally, the assumption that all changes in supplier are voluntary is faulty in each state. In New York, as the summer of 2000 approached, some ESCos dumped customers back to their traditional utility (or "supplier of last resort") so they would not be associated with the coming summer price spikes. Similarly, Enron dumped its Silicon Valley customers back to PG&E, although it made them whole. Rising wholesale prices tend to "price out" suppliers who do not own their own generation, leaving no room for them in the market. Additionally, in Pennsylvania approximately 60,000 customers have been involuntarily transferred from their traditional utility to either New Power Company or Green Mountain Power. If customer "choice" is simulated through involuntary transfer, the measurement of these transfers as an indicator of "choice" is faulty. These numbers are different in quality and kind from numbers resulting from volition, and would have to be tracked separately in an evaluation.

Assumptions underlying the Competitive Market

As discussed above the following are the characteristics of the competitive market. If the market does not meet each of these it is not a competitive market but is another "animal". If it is not a competitive market it will not behave as a competitive market, but may become predatory, as in California. The assumptions of "The Market" are:

(1) Ease of entry into production
(2) Price structure that faces all firms equally
(3) Easy factor mobility
(4) Equal access to information and technology
(5) No product differentiation
(6) Numerous producers so that none may exert market power
(7) Aggregation of suppliers, by collusion or gaming, is preventable
(8) As economic and political entities, buyers, workers, sellers, and owners of the means of production have roughly equal access to resources and are of roughly equal economic and political power.

It would not be expected that the market would be *immediately* competitive. However, the establishment of the competitive market should be considered as a prerequisite for the removal of the retail price caps (and the end of the *intermediate* goal period) if deregulation is to function as advertised.

Assumptions underlying lower prices

Normally, price is indicated through the retail rate structure. In this instance, due to the enormous costs of transition and state intervention, analysis of price must include costs shifted off from rates and into the tax structure. It should also include any bonding arrangements in which costs of deregulation are put off into the future, and the monetary effects of the collapse of bond ratings. In addition, there is the (otherwise avoidable) complete cost of rebuilding transmission systems to accommodate commercial market use -- a type of use not contemplated in their design, and the complete cost of new gas pipelines to accommodate new generation. Deregulation entails the need to socialize these otherwise unnecessary upgrade costs. Additionally, the costs of extensive overbuilding required to insure the possibility of a competitive market (the "commercial reserve" of 47% to 52% extra generation capacity) must be passed on to the consumer. Therefore, the true price to the energy user is much higher than the bill presented by the energy supplier, which (once uncapped) is also likely to be higher than the pre-deregulation rate. It should also include several other cost categories that have been shifted off rates in the political movement to pass deregulation legislation. Finally, person-hours necessarily spent within each state for the proper operation of the "choice" structure as citizens shop to supply their energy needs, as well as "buyer beware" costs associated with the choice of a sub-optimal ESCo for supply must also be quantified and included to properly understand the "price" of deregulation.

Assumptions underlying Regulatory Benefits

The assumptions underlying the regulatory benefits are equally open to question. First, as discussed earlier, the capped rate may be offset by cost recovery of stranded assets and other financial arrangements that do not appear as offsets on the face of the customer bill. Second, there is a potential problem with all of the special funds in that (a) they may seem like pots of "free money," and (b) the existence of these special funds may divert advocacy communities from alert and highly networked advocacy to becoming de-networked fund administrators and service providers focused on their separate funds.

Assumptions underlying Regional Price Differences

There are several assumptions relating to regional price differences. The primary assumption is that regional price differences are a problem. In areas where regional price differences are lower than the norm, the local population considers this a benefit. The other is that price differences are not due to natural characteristics of regions but to lack of competition. The third is that the scope of competition introduced by deregulation would be a national market that would result in the "averaging out" of price differences among regions.

Assumptions underlying Reliability of Service

The primary assumption here is that reliability can be obtained more effectively and efficiently through market forces rather than through state planning. Additionally, one must assume there is not "gaming" of the structure to reduce supply and that the cost of service is affordable to all customer classes (including the low-income customer class).

Assumptions underlying Cleaner Environment

To establish a cleaner environment it is assumed that the balance of generation sources will trend toward less polluting supply. The question with regard to the *long-term* goal of changing the generation mix is whether paying premium price for green power through a deregulated market has a quantitatively meaningful effect on the generation mix, in contrast to alternatives. Further, there are critical assumptions that must be addressed for long-term assessment. First, do the green options make sense in a net (embedded) energy analysis? We know in advance that natural gas, as a "clean" option will not pass a net energy test. Second, with regard to natural gas, are the pipelines and capacity already in place to support planned additions to generation? If not, a portion of the cost of new pipelines is due to deregulation. Also, the increased environmental risk and effects on quality of life would need to be factored in. In particular, the commercial reserve factor (the need to overbuild capacity by 47% - 52%) as a precondition for a competitive market will have to be entered into the equations as a negative factor. Finally, if deregulation caused mothballed plants to re-open or the retrofit of old plants with "grand fathered" pollution permits, the environmental effect might be a net negative result. Similarly, if deregulation caused siting of so-called "temporary" diesel units or the use of urban back-up generators (hospitals, etc.) for peak periods (in the form of load coops, or the like) the result might easily be a net negative. Or, if air pollution standards were relaxed in practice or stretched over time to accommodate energy shortages, the environmental effect of deregulation would likely be negative. Just causing mothballed plants to be treated not as depreciated economic units but on the same basis as new plants in selling into the market might be sufficient to insure a negative environmental effect. All of these factors would have to be taken into account.

Assumptions underlying Fuel Diversity

Increasing fuel diversity is probably one of the weakest goals of the deregulation political platform. Essentially, the idea is that customers will choose various fuel sources through the mechanism of the competitive market. These requests from customers will translate, eventually, into a mix of facilities using diverse fuel types. This is probably not a serious goal of deregulation, but a goal "added on" to enhance the persuasiveness of the deregulation program to a small degree. Of course, this assumes that fuel diversity is a valuable characteristic to the consumer, above price. Currently all sited generation plants in California are combined cycle natural gas facilities. Natural gas is currently the primary fuel source for the generation of electricity in California.

Assumptions underlying Market Dominance

Market dominance as a benefit is here removed from the separate question of whether or not trading the oversight of commissioners and a structure of law and regulation for oversight by the Golem of the market actually reduces prices. California, for example, has clearly succeeded in letting loose the market Golem to the great detriment of its people and institutions. Yet the experiment did succeed in replacing traditional least-cost regulation, planning, forecasting, cost-based generation and economic dispatch by the rule of the market.[31] In this area, the lesson learned is that to make markets serve people, the market must be regulated through rules that promote service and prevent exploitation. (Exploitation would be indicated should generators show a high rate of profit from taking advantage of favorable market conditions, naturally occurring or "gamed" as evidenced by pre and post deregulation generation supply, while customers experienced decreasing service reliability and price shocks).

Assumptions underlying Price Advantage

It is fair to say that the public thought they were hearing a benefit of lower prices to all when statements actually had to do with domination of the public by the market. Price advantage to the consumer, beyond the regulatory advantage provided through transitional price caps, is an almost vanished claim. It is still included on lists developed by conservative think tanks, but hardly, if at all, mentioned in the communications claims of the state commissions.

Conclusions: Policy Implications

First, the form in which the theory of the program is (more realistically) articulated today does not mesh well with the original vision of the entrepreneurial phase of the reform – it turns out that the rhetoric justifying deregulation is shifting away from price savings, and even away from choice. The core benefits of deregulation are not in the form of price, they are inherently regulatory! Second, the logic model for the deregulation program is extremely weak. It is dependent on the establishment of truly competitive markets for wholesale and retail electricity supply, which has not occurred yet, and may not be possible except in theory. Third, the application of the logic model to the customer segments indicates a very mixed performance to date. Finally, it must be acknowledged that we cannot really know the outcome of the various experiments until they follow the path to reach the California stage. It is only when wholesale and retail price caps are lifted and suppliers may be free to charge what the market will bear that the final outcomes of the state experiments cam be seen. The real answers await the evolving shape of the capacity supply curves and the period after the removal of rate caps. Looking

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[31] "They would have to depend on the new supplier, using whatever means the market offered to guarantee good service. Moreover, in such a competitive market of power producers, the California Energy Commission's traditional approach for determining the amount of capacity needed by utilities (a process that yielding a report known as the 'Biennial Resource Plan Update') would be scrapped. Competition among suppliers would provide a match between supply and demand without intervention from the state" Hirsh (1999:253).

back at the entrepreneurial movement leading up to legislation and/or implementation of deregulation in the lead states, both the promises and the logic supporting the benefits of deregulation were surprisingly weak.

When put into the format of a theory of the program and analyzed in logic model, most elements of deregulation do not pass a straight-face test. The basic argument that the public thinks was made for deregulation (lower prices to all) does not hold under analysis. Actually, when the words are analyzed, commissions did not make any hard promises about deregulation lowering energy prices across customer segments.[32] What was promised to the customer was "choice" in the literal and abstract sense -- *not lower price.* Even "choice" was premised on an ample supply of energy that would allow niche players and brokers to function in the market, with a large number of suppliers. As the wholesale price moves up following deregulation, those players who do not own their own generation are eliminated and the market changes form. Deregulation can only work if it complies with the picture of an ideal Economics 101 competitive market with many suppliers vying for each customer's service ("The Market"). But the markets that have emerged are oligopolistic markets in which price is dictated by suppliers working (legally) in concert (without "conspiring" – they don't have to). The image of a multitude of suppliers bidding down price to all consumers in a situation of oversupply has been replaced by the reality of shakeout, merger, consolidation and energy shortage. Thus "choice" – even in the abstract – continues to erode.

What was promised to the generators was freedom from the obligation to serve and, generally, freedom to sell at what the market would bear with no effective regulation.[33] Under the new rules, generators are free to sell to the most profitable markets, so that building more plants within a state is not necessarily a solution to that state's energy problems. What is clear is that deregulation in California succeeded in moving electrical energy supply away from the system of traditional least-cost regulation and integrated resource planning and permitted the market to dominate supply. In so doing, it unleashed a disaster *in the form of a demonic Golem market that pumps wealth out of families, institutions, and the state.* Still, at least in this respect, what was promised was accomplished – energy supply was shifted from human planning and control and over to unbridled market forces.

From an evaluation perspective each state that opts for some form of deregulation is a separate experiment. As noted by Federal Energy Regulatory Commissioner N.M. Brownell, deregulation will take time. In California, the electric supply system is like a reactor that has gone prompt-critical, (or "Chernobyl"). *However, in the other lead deregulation states, the situation is much more moderate and there will be time to work on incremental changes that might allow some form of deregulation to achieve its design goals through strong re-regulation.* For example, in New York if deregulation is to provide any price benefit to residential and low-income customers, the market will have to be guided through strong re-regulation that provides incentives to ESCos to offer lower rates to these sectors.

Finally, in the problem-centered focus of evaluation, it does not really matter if "Plan A" (deregulation) does not work, so long as strong measurement and evaluation occurs to rapidly feed back information and analysis to commissioners. The empirical world is already editing the experiments, so that in the lead states "Plan A" is already becoming "Plan B" and deregulation is becoming increasingly regulatory.

If the problem is energy prices and the goal is to lower price to all customers, deregulation rules will have to be modified, or some other plan, such as integrated resource planning or public power will

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[32] Those arguments were made by early proponents of reform, but were not promises of the legislatures or of the regulatory commissions.

[33] Note that in a market system, if generation companies may lose substantially if there is an oversupply, then it may simply be the other side of the balance in terms of assuming market risk that they would be free to sell at what the market will bear, and receive huge profits when they find favorable markets.

have to be adopted. If strict evaluation methodology is not adequately utilized, stopgap measures and inadequate incremental program shifts will rapidly erode public tolerance to the experimentation process and the experiments will be repealed.

In view of the tragic economic consequences introduced by the deregulation experiment in California, and pressures introduced by deregulation elsewhere, advocates now ask for public tolerance – that deregulation be given more time. Commissioner Brownell, for example, notes that it takes time to develop markets; that we have learned that markets do not develop overnight; and that deregulation is currently in its infancy and should be given a chance. Such an appeal for time makes sense ***only on four conditions***:

(1) *Advance precise specification of all goals and time limits* (*e.g.*, lower prices from "x" to "y" – two years to implement deregulation and three to show strong positive results due to market forces rather than by residual regulation). Specify a stopping rule if these results are not achieved or negative results swamp positive outcomes.

(2) *Incorporate a strict and systematic system of critical and ongoing evaluation* of the each state experiment. If the evaluation shows failure of deregulation, put it down and move quickly to another approach to achieve goals.

(3) *Specify and openly develop public discussion of alternate means to goals* if deregulation fails (*e.g.*, state power authority, seize generation stations, public power, return to least cost planning and DSM).

(4) *Open discussion to provide full public disclosure of risks* of deregulation vs. possible benefits (*e.g.*, price will go up if the market fails to become competitive with substantial oversupply, national markets may be required to make deregulation work leading to a need to repeal the Public Utility Holding Company Act, some generation companies may be incented to antisocial acts, there may be serious disruptions of service reliability, there may be severe price shocks, etc.). Risks and benefits to be stated in a form easily understood by non-specialists (*e.g.*, rates could go down to a targeted 3.3%, if successful; but rolling blackouts and 43% -120% rate increase if deregulation fails.)

These conditions require an integral evaluation component to *test specific performance against specific promises within defined performance periods*, an explicit *stopping rule* and a *back-up plan.* In addition to simple indicators such as percentage of customers who "choose," other (more critical and complex) indicators are necessary. Effects must be continually assessed across customer classes (industrial, commercial, residential, and low-income customers). Analysis of market failure and government failure should be developed, as well as assessment of effects on the public service ethic, least-cost utility planning, economic dispatch and pricing policies, affordability, continuation of service (reliability), ability to pay, customer service, and transfer of costs to customers. Each of the deregulation experiments is a case of government failure in that systematic evaluation was excluded – that failure should be remedied immediately.

Table 6. Reference: The Social Costs of Deregulation in California

Costs Estimates for the State of California and its citizens due to Deregulation Movement Program implementation and continuing operation.

$20 Billion -- including stranded cost recovery and deregulation settlement rate tariff.

$60 Billion -- in power purchase, for one year of operation, above possible return through rate structure.

$17 Billion -- in interest over 20 year bond payoff assuming continuing credit rating reduction for state.

$24.5-$250 Billion -- in lost economic activity due to projected 260 hours of summer rolling blackouts at 3,500 MW each with lost activity approximately $16,000 per MW undelivered plus estimate of long-term economic effect of sudden economic shock.

(Priceless) -- Value of tragedy of public welfare impact due to: threat of rolling blackouts, potential economic decline caused by energy cost pass-through, value of state programs underfunded due to depletion of California General Fund, long-term economic impact of the impacts to those state programs (*e.g.,* education).

Table 7. Reference: Globalization Effects of Electricity Deregulation.

"We have to go into higher begging mode for generators out of state," said Jim McIntosh, director of grid operations for the ISO. "It scares the hell out of these guys. They've never been put in that position. . . . From the electricity standpoint, we're operating like the Third World."
San Francisco Chronicle, May 10, 2001 "Proud State Forced to Knees in Power Hunt"

State Sen. Jim Battin, R-Palm Desert, said he thought seizing plants was a horrible idea. "We would become a third world country and start nationalizing things," Battin said. "Nobody would ever build a power plant in California again. I think that would be a really bad play."
San Francisco Chronicle, April 9, 2001 "Power Grab – Some Democrats Favor Seizing Plants"

We'll get around it. But that's not the point," said Robert Ruggeri, co- owner of Silver Terrace Nurseries, located in San Francisco's Flower Mart, which lost power for an hour yesterday morning. "This is not a Third World country. The governor better get on the stick and fix this or he's gone."
San Francisco Chronicle, March 21, 2001 "Businesses Weather Blackouts"

At the USS-POSCO steel mill in Pittsburgh, that threat has already become reality for 40 workers. They were laid off when manufacturing was scaled back because of skyrocketing gas prices that leaped from $300,000 a month to $1.6 million in December, said Chief Financial Officer Steve McFatridge. "We're paying double what the Midwest is paying," McFatridge said. "Slovakia is paying less -- and that's a Third World country."
San Francisco Chronicle, March 24, 2001 "Hearings on Cost of Natural Gas Skyrocketing Prices Affecting Economy"

Comparing California's blackouts to a Third World affliction, consultant Peter Fox-Penner of the Brattle Group said: "There is no parallel to this episode in the history of the developed world."
San Francisco Chronicle February 1, 2001 "Senate Powerless on Power, No Easy Answer to State Energy Crisis"

When the shareholders of Duke Energy Corp. gathered for the company's annual meeting, Chief Executive Richard Priory likened California's business climate to that of a Third World country: "It's no different than if it was Ecuador or Peru and we had investment decisions to make in those countries."
Contra Costa Times, May 6, 2001 "Generators, Davis Meet Wednesday"

Acknowledgements

We would like to thank the following for their critical review, comments and suggestions for this paper: Ed Vine, Bill Saxonis, and Les Baxter, and to thank John Hughes, Dennis Nelson, and John Jones for sharing insights into particular aspects of deregulation.

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