

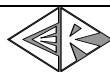
Statement of Larry E. Ruff, PhD
on
California State Senate Bill No. 2000
Unlawful Electric Power and Natural Gas Practices

Before the
Senate Judiciary Committee
April 23, 2002

1. INTRODUCTION

I want to thank the Committee for the opportunity to make this statement summarizing my views on Senate Bill No. 2000 (SB 2000). I am making this statement at the request of Sempra Energy, but the views expressed are my own, based on my own experience with competitive electricity and gas markets. My statement focuses on the economic and implementation issues raised by SB 2000; it is my understanding that Sempra intends to submit a separate legal memorandum to the Committee addressing legal and jurisdictional issues.

My detailed professional résumé has been provided to the Committee. In summary, I have a BS in physics from the California Institute of Technology, a PhD in economics from Stanford University, and 35 years experience as a researcher, analyst and advisor in academia, government, business and private consulting. For the past fifteen years I have been a consultant focusing almost exclusively on the development and implementation of competitive electricity and gas markets around the world, first as a senior member of specialist economic consulting firms and for the last two years as an independent consultant. I have testified many times before the Federal Energy Regulatory Commission, state regulatory agencies and foreign authorities, and write and speak widely, on competitive electricity and gas market issues.



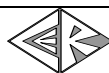
For the record, I have had little involvement in the California electricity market. I informally advised members of the California PUC on the theory and practice of competitive electricity markets prior to publication in 1994 of the PUC's "Blue Book", and was a consultant to San Diego Gas and Electric Company (SDG&E) during early market design discussions. But my involvement in California ended in 1995, when the Memorandum of Understanding (MOU) proposed and the PUC adopted a wholesale market design with which I fundamentally disagreed. In particular, I – and others – said that the split between the ISO and the PX was primarily a device to create business and profit opportunities for middlemen such as Enron, and that the resulting inefficiencies and gaming would ultimately impose large costs on the market and on consumers. Those of us who held this view were regarded as unconstructive and were "invited out" of subsequent market design discussions in California, so my consulting practice moved elsewhere. I have often said that California was the best consulting job I ever lost.

2. SUMMARY ECONOMIC EVALUATION OF SB No. 2000

SB 2000 would add a new Title to the California Civil Code, entitled "Unlawful Electric Power and Natural Gas Practices." The core of SB 2000 appears – misleadingly, as discussed below – to be simplicity itself, stating succinctly that:

1. No person in the electricity or natural gas business shall "possess and exercise market power," with the exercise of market power defined as "charging prices above the competitive benchmark" and the competitive benchmark defined as "the short-run marginal cost of the highest cost unit needed to meet demand;" and
2. A person violates the prohibition on possessing and exercising market power "shall ... be required to disgorge" the amount of the ill-gotten gains from such "unlawful conduct" and in addition is liable for three times this amount in damages.

I understand and share the implied objective of SB 2000 – to assure that the exercise of market power does not increase the price of electricity or natural gas above the "competitive" level. But SB 2000 would not accomplish this objective, and in fact would create administrative and legal quagmires and uncertainty to the detriment of consumers and the general economy in both the short run and the long run.

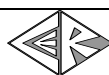


There are two basic economic problems with the approach proposed by SB 2000. The first is that the definition of the “competitive benchmark” as “the short-run marginal cost of the highest-cost unit needed to meet demand” is imprecise or even incorrect as a matter of economic logic, and would be unworkable in practice. The second is that SB 2000, instead of making it unlawful to do anything that actually increases prices, makes it unlawful simply to “charge” prices above some undefined and largely arbitrary level, which could make ordinary, competitive contracting and other market behavior potentially unlawful and subject to severe financial penalties. The combination of an imprecise and incorrect definition of the competitive benchmark and potentially severe punishment of normal, competitive market behavior would make implementation of SB 2000 either impossible or grossly distorting – or both.

3. SRMC AS THE COMPETITIVE BENCHMARK

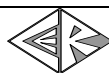
Economic textbooks tell us that the market price in a “perfectly competitive” industry at a specific time and place is the short-run marginal cost (SRMC) of meeting (or curtailing) demand for that commodity at that time and place. No real-world market is perfectly competitive, so in practice this textbook definition becomes a statement about tendencies and comparisons: In a workably competitive industry, the market prices approximate SRMCs, and the effectiveness of competition can be measured by how closely they do so.

The proposition that competitive prices approximate SRMCs is logical enough, but is difficult to convert into a quantifiable policy or legal tool because it is very difficult to define, much less measure, the SRMC that is relevant for pricing purposes. Crude measures of SRMC can be and are compared to market prices in order to identify the possible exercise of market power and to compare the effectiveness of competition in different industries or situations. But measures of SRMC that are good enough for such analytic purposes are totally inadequate for determining the actual competitive price of a specific commodity at a specific time and place, particularly for the purpose of proving guilt and assigning damages in a court of law.



The measure of SRMC that is relevant for pricing purposes is not just the cost of the fuel used to produce an incremental unit of output, but includes all costs, present and future, certain and uncertain, monetary and non-monetary, out-of-pocket and opportunity, of producing incremental output. For example, the SRMC of a MWh of electricity includes any fuel cost of producing an additional MWh now, plus the increase in (or acceleration of) future maintenance costs caused by the additional output, and plus any opportunity cost of using limited energy or pollution allowances to produce MWh now when the price may be higher later. During times of system stress, when generators may operate beyond design output levels or delay maintenance, SRMC includes some amount representing the uncertain and even subjective costs and risks of stressing equipment and personnel. Given the many complex and speculative factors that determine actual SRMC, a supplier seldom knows its own SRMC precisely and, particularly under scarcity conditions, must often make real-time judgments about SRMC that are hard to explain or understand based on partial or *ex post* information. If a generator cannot know its own SRMC accurately, how could a regulator or court determine SRMCs with the reliability needed to prove legal guilt or assess damages?

Even if an external observer could determine the SRMC of the highest-cost unit that *is observed to be* needed to meet demand at any time, the identity and SRMC of this unit will depend on which units are actually available to operate at that time. A generator can exercise market power by declaring some relatively low-cost units unavailable, citing as justification the need for tests or maintenance, a shortage of spare parts or pollution allowances, or any number of other factors, thereby forcing higher-cost units to operate more and increasing the SRMC of the highest-cost unit used to meet demand. Indeed, even a generator without market power may choose to declare a unit unavailable if the “SRMC police” are likely to underestimate SRMCs and then find the generator in violation of the prohibition against charging more than SRMC. It will be impossible for regulators or the courts to determine whether a generating unit is being declared unavailable as a way to exercise market power, as a response to the threats created by SB 2000 or because the unit really is unable to run. For example, deliberate withholding of capacity was widely alleged to have occurred during the crisis in California, but has – to the best of my knowledge – been impossible to prove. The same would be true under SB 2000.

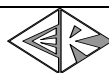


There is another, more fundamental problem with SB 2000's competitive benchmark: on a complex electricity grid with transmission constraints, there is no single measure of SRMC applicable everywhere on the system. In order to meet demand at all locations without violating transmission constraints, some high-cost units may be "constrained on" in some locations while some lower-cost units elsewhere are "constrained off." In principle, the concept of using SRMC to determine a competitive benchmark could be extended to this situation by using a different competitive benchmark at virtually every location or node on the grid, but this would clearly destroy the illusion that there is anything simple about the approach proposed in SB 2000.

In short, the competitive benchmark proposed by SB 2000 is poorly defined in concept and unworkable in practice. Any economically meaningful competitive benchmark would have to be far more complex, even in concept, than just the SRMC of "the highest cost unit needed to meet demand." Any effort to quantify SRMC would require a costly, intrusive and ultimately inconclusive effort to collect and analyze detailed and often proprietary data and to read the minds of unit operators and management; such an effort could even induce generators to declare plants unavailable rather than risk having their SRMCs underestimated by the SRMC police. Given the large amounts of money riding on the magnitude of the competitive benchmark, any estimated SRMCs would be highly controversial and aggressively challenged. As an economic consultant I should support this proposal to base litigation worth billions of dollars on SRMC concepts and estimates that are so easy to discredit as at best approximations and at worst arbitrary. But as one who cares about the content and effect of public policy and about the efficiency of electricity markets, I must go against my own economic interest and recommend against going down this road.

4. MAKING IT ILLEGAL TO "CHARGE A PRICE"

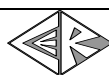
SB 2000 has been represented as prohibiting certain types of behavior rather than trying to regulate prices or outcomes. But SB 2000 would not make it illegal to manipulate market rules or collude or withhold supply or do any of the other things usually defined as exercising market power. The only action that would be made illegal by SB 2000 would be "charging prices above the competitive benchmark."



Even if the competitive benchmark were much better defined and much easier to quantify than it would be under SB 2000, making it illegal merely to charge a price would be very bad policy and – if the Committee will excuse an economist making a legal judgment – very bad law. There are many reasons for this, but let me illustrate the point with the following two sets of questions.

- **Which “prices” cannot exceed the competitive benchmark?** Suppose a generator sells its output under a long-term contract and the prices in that contract are at certain times above the SRMC of the highest-cost unit needed to meet demand at those times. Is the generator in violation of SB 2000? Are the “prices” referred to in SB 2000 only *spot* prices, or are they the average contract prices over the contract term or over some other period? Is a generator in violation of SB 2000 if its contract prices *actually* exceed the competitive benchmark over the contract term, or if they were *expected* to do so when the contract was signed, or only if they were both expected to and did exceed the competitive benchmark over the contract term?
- **What if a seller is passively accepting the going market price?** Suppose a small hydro or geothermal generator passively sells its energy in a spot or short-term market at the going market price, and that price is later found to exceed the SRMC of the highest-cost unit needed to meet demand at some times. This small generator is, by definition, “charging prices above the competitive benchmark” and hence is presumably in violation of SB 2000. Might this generator be required to “disgorge” its excess profits plus three times that amount as additional damages? What should this generator do to protect itself from this possibility?

I think most reasonable people would agree that it should not be illegal to sell at contract prices that are sometimes above the SRMC of the highest-cost unit needed to meet demand or to sell passively at prevailing market prices that are later found to exceed some poorly defined competitive benchmark. But this is what is implied by a literal reading of SB 2000 in its present form. Presumably SB 2000 could be revised to try to define precisely which prices cannot exceed the competitive benchmark, and for how long and by how much contract prices could exceed the competitive benchmark, and which small or passive sellers might be exempted, and ... Such revisions and clarifications would expand SB 2000 from its current sixty lines to perhaps sixty pages, and would probably make it obvious that this whole approach is so complex and arbitrary as to be unworkable. Alternatively, SB 2000 could be passed in its present form and then regulators and the courts could begin making the complex and arbitrary judgments required to try to implement the new law. Either way, the



fundamental problem with SB 2000 would remain: It is trying to determine and impose a competitive outcome rather than to create real competition.

5. CONCLUSIONS AND RECOMMENDATIONS

SB 2000 in anything like its present form is unworkable and unwise as an economic and policy matter, whatever its merits or demerits on legal and jurisdictional grounds. The fundamental economic and policy flaw in SB 2000 is its focus on market outcomes rather than market structure, just the opposite of the approach generally taken in competition policy and law. As a general matter, competition policy does not try to determine what the outcome of a truly competitive market would be and then impose that outcome on a basically uncompetitive industry. Instead, competition policy tries to create an industry structure that is inherently competitive because it has many, competing players, or at least to induce the players in the industry to act as though they were competitive, and then lets the competitive process determine prices and other features of the industry. A policy focused on market structure and (secondarily) behavior is far more feasible to implement than a policy focused on market outcomes, and is economically preferable because it allows the operations and evolution of the industry to be determined by competition rather than by calculations or judgments of competition authorities and judges.

Competition policy, in the electricity industry as elsewhere, should try to create competitive market structures and behavior rather than trying to determine and impose a “competitive” market outcome. Policy makers should assure that the critical wholesale market processes are efficient and nondiscriminatory, that no single supplier or colluding group of suppliers dominates the market, that any suppliers with potential market power – e.g., reliability-must-run (RMR) units – are suitably restrained by contract or regulation, and that entry is as easy as possible given legitimate environmental and other factors. Market monitors should have adequate resources and independence to identify market power abuses and inappropriate market rules and to report these directly to regulatory and market governance authorities. Such competition-enhancing measures are not easy or totally nondistorting; but they are much easier and less distorting than the SB 2000 approach of trying to determine and impose a “competitive” solution on a complex, dynamic industry.

