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A Reader's Guide to the Blue Book: Issues in California's Electric Industry Restructuring and Regulatory Reform

James Bushnell and Carl Blumstein

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University of California Energy Institute
2539 Channing Way
Berkeley, California 94720-5180
www.ucei.berkeley.edu/ucei

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A READER'S GUIDE TO THE BLUE BOOK: ISSUES IN CALIFORNIA'S ELECTRIC INDUSTRY RESTRUCTURING AND REGULATORY REFORM

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Carl Blumstein and James Bushnell (principal authors),*UC Energy Institute*

Severin Borenstein,*UC Energy Institute and Dept. of Economics, UC Davis,* Haru Connolly,*UC Energy Institute and Dept. of Economics, UC Berkeley,* Charles Goldman,*Lawrence Berkeley Laboratory,* Edward P. Kahn, *UC Energy Institute and Lawrence Berkeley Laboratory,* C. Michael Lederer, *UC Energy Institute,* Jeffrey MacKie-Mason,*UC Energy Institute and Dept. of Economics, Dept. of Public Policy, University of Michigan,* C. Bart McGuire, *UC Energy Institute and Dept. of Public Policy, UC Berkeley,* Shmuel S. Oren, *Dept. of Industrial Engineering and Operations Research, UC Berkeley,* Pablo Spiller, *Haas School of Business, UC Berkeley and University of Illinois-Champaign,* Steven Stoft,*UC Energy Institute and Lawrence Berkeley Laboratory,* Kenneth Train,*Dept. of Economics and Center for Regulatory Policy, UC Berkeley,* Matthew White,*UC Energy Institute and Dept. of Economics, UC Berkeley*

University of California Energy Institute
2539 Channing Way
Berkeley, CA 94720
(510) 642-9588 phone
(510) 643-5180 fax

INTRODUCTION

This report provides a guide to the policy issues raised by the California Public Utilities Commission's (CPUC or Commission) *Order Instituting Rulemaking on the Commission's Proposed Policies Governing Restructuring California's Electric Service Industry and Reforming Regulation* (R.94-04-031), hereafter referred to as the "Blue Book." The Blue Book proposes opening portions of the California electric power industry to further competition and introducing performance based regulation for the remaining elements of the industry. The electric power market would be divided into two sectors: the direct access sector in which customers buy from their supplier of choice, and the utility service sector in which customers buy from the utility. Without taking a position on the merits of the Commission's proposal, we observe that it envisages profound changes in the California electric power industry. The purpose of this guide is twofold. Our first goal is to clarify the choices to be made in pursuing these changes and the effects of those choices on a set of criteria by which the results of a restructuring of this nature could be evaluated. Our second goal is to identify those issues that present the largest technical challenges to carrying out the Commission's proposal.

The Blue Book embraces two competing strategies for the future structure of the California electric power industry. One is a bilateral retail wheeling structure, and the other is a UK-style transmission pool. The Blue Book describes a framework for implementing the former, but articulates a long term vision more closely aligned with the latter. Under a bilateral retail wheeling structure, utilities would continue to be vertically integrated, but would have to compete for the demand of their native load customers. Utilities would still provide transmission network services and be obligated to carry the transmission loads of competitors at regulated prices. In the United Kingdom (UK), the creation of the Pool was accompanied by the complete separation of ownership of generation, transmission and distribution. The transmission owners play the role of "market makers."

Of course, the challenges of transforming the existing industry along the lines of either strategy are enormous. Two key issues are the pricing of transmission and the future role of today's vertically integrated utilities. If the vertically integrated utilities remain largely intact in a bilateral retail wheeling structure, their coordination abilities could enhance reliability and reduce transaction costs. However, the utilities would also have a correspondingly large capacity for the exercise of market power. If the utilities are dismantled along the lines of the UK model, then new mechanisms for coordination would have to be developed. In the bilateral model, transmission pricing and the rules for transmission access would be major and difficult focus for regulation; when the grid is managed by a vertically integrated utility, there is a strong incentive to use transmission strategically. If a UK-style pool develops, the focus of transmission issues would be more technical; a good understanding of transmission costs is important for efficient pool operation. Thus our comments consider the issues that might arise from moving the industry in either of the two directions. We also comment on the areas in which the two strategies directly conflict with each other, reflected by the sometimes contradictory policies outlined in the Blue Book.

Another important set of issues in the proposed restructuring concerns the many social and contractual obligations that are currently components of a utility's revenue requirement. These include the amount, if any, that ratepayers should pay for utility investments that would be "stranded" by restructuring. Other obligations involve programs intended to be socially beneficial, such as energy efficiency, low income subsidies, expanded use of renewable resources, and research and development. If the proposed changes go forward, all these programs and obligations would either have to find an alternate cost recovery mechanism or be eliminated. One alternate mechanism is an additional charge or charges

for using the transmission and distribution network. Such charges could be levied on suppliers, consumers, or both and could be applied differently for different classes of consumers. We will refer to them generically as electric service surcharges (ESSs). The Blue Book proposes ESSs including a "competition transition charge" to pay for stranded assets and "as part of each consumers demand charge, a separate line item" for some social programs. The latter is proposed as a stop gap while searching for a better alternative.

The debate over the funding of these programs will be framed by the question of which costs should be included in the ESSs. But how the ESSs are structured and how they are shared among suppliers and consumers is also important. For every program included in the ESSs, consumers will see a corresponding increase in prices unrelated to production costs. Estimates of the efficiency effects of these price increases and proposals for dealing with them will be critical to making an informed choice of policy options.

An issue not treated below that must be mentioned is jurisdiction. The reforms proposed by the CPUC would have a direct effect on the electric power industry in every state in the western U.S. as well as western Canada and northern Mexico. Some of the CPUC's proposed changes fall under the jurisdiction of the Federal Energy Regulatory Commission (FERC), the California Energy Commission (CEC), or the California State Legislature. These institutions will undoubtedly influence the restructuring process and may have a decisive role in advancing or blocking the Commission's proposal. While jurisdictional issues will undoubtedly affect the outcome of the Commission's proposal, they do not change the underlying policy issues that must be addressed.

We are aware that the very act of raising issues can be viewed as opposition to the Commission's proposals. Some may believe that the costs of delaying the gains from change are so great that they dominate all other concerns. When one views the process from this perspective, the listing of the challenges and effects of change can be construed as a delaying tactic. This is not our intent. While the gains from restructuring the electric power industry may be significant, the issues we examine must still be faced eventually. This can be before, during, or after implementing the restructuring. Indeed, as the Blue Book calls for phasing in change, there may be opportunities to revisit these issues many times during the process.

POLICY ISSUES

This guide is based on criteria against which one might judge the results of reform and restructuring. The criteria are organized in five major categories: economic efficiency, equity, technical efficiency of the transmission and distribution network, quality of service, and externalities/public goods. Criteria are numbered and set in bold face. The numbering system indicates the hierarchy among criteria (e.g., **1.1.** is subsidiary to **1.** and **1.1.1.** is subsidiary to **1.1.**). After each criterion, relevant comments from the Blue Book are in italics, and our remarks and clarifications are in regular type. Numbers in parentheses refer to page numbers in the Blue Book.

1. Economic Efficiency

1.1. Short term

1.1.1. Operate available generation efficiently

The CPUC proposes performance-based regulation (PBR) for the utility service sector. PBR would reward utilities for reducing costs by setting rate adjustments with formulas based upon productivity factors and inflation indices. The Commission would base reforms on utility-initiated proposals case-by-case for the utilities that it regulates. The Commission would not attempt to devise a single, uniform approach for all utilities. (35)

Currently, utilities are responsible for the dispatch of the generating units in their system. Utilities under cost-based regulation do not have an overriding incentive to dispatch in a least cost manner. Additionally, utilities are constrained by contracts with Qualifying Facilities (QFs) over which they have little operational control. QFs are non-utility generators from whom electric utilities are required to buy power under state and Federal regulations. Consequently, utilities frequently have units on the margin that have lower operating costs than some of the units dispatched before them. The "marginal" costs of California utilities, therefore, do not necessarily increase with demand, as would generally be the case if dispatch operations were efficient.

The Blue Book divides the market for utility services into two sectors: the direct access sector in which customers buy from their supplier of choice, and the utility service sector in which customers buy from the utility. Note that PBR applies only to the utility service sector. It's not clear how the dispatch of generation units for the direct access and utility service sectors would be coordinated.

The Blue Book proposes to allow customers who choose to enter the direct access sector to negotiate bilateral agreements with their supplier of choice . Utilities would be "obligated to provide transmission and distribution services on a non-discriminatory basis to direct access customers who require such services." (30)

The efficiency of dispatch in the presence of decentralized suppliers and customers will depend upon how well the emerging contract market functions. If transmission prices reflect costs correctly, and if a smoothly functioning contract market develops, then the incentives for the efficient utilization of generation will exist. The behavior of power markets when these two assumptions are not fully met is an important line of inquiry. A decentralized electric power market may create problems relating to network reliability and the abuse of market power. We address those issues in later sections.

The Blue Book invites comment on what role the Commission should play in organizing the market and, in particular, whether a UK-style power pool should be organized. (26)

With a UK-style pool, many bilateral contracts may exist but the operation of the pool separates the dispatch process from the obligations of those contracts. The contracts are financial instruments that can, for example, guarantee a price for a supplier or

consumer. Actual dispatch is determined by a daily auction that gives suppliers strong incentives to reveal their true costs. Given this information, a cost-minimizing pool operator will dispatch efficiently, provided that transmission pricing adequately reflects transmission costs. However, creating a UK-style pool that can coexist with a vertically integrated utility service sector may be impractical due to the potential conflicts of interest that would result. The operator of the pool is expected to be indifferent to sources of supply. However, if the pool operator owns some of those sources, it may be difficult to ensure that operations are free of bias.

Any serious consideration of a UK-style pool in California will also have to account for the fact that California utilities are only a subgroup of the relevant western power market, which spans multiple states and three countries. Thus, unlike the UK, there would be considerable interaction with parties outside of the pool. The effects of efficient dispatch within a pool will be diluted if the pool's interactions with the outside are inefficient.

1.1.2. Realize gains from trade (generation should not be idle when there is a buyer willing to pay more than operating costs of that unit for its output)

The CPUC proposes to permit, beginning in 1996, progressively smaller customers to participate in the direct access sector. These customers could negotiate service terms and prices with any supplier they wish. All customers could participate by 2002. (37)

If the direct access market includes an unconstrained competitive spot market, one would expect that prices would fall to the running cost (i.e., the short-run marginal cost) at times when excess capacity was available. Currently, there is an excess of generation capacity in California and the Western power market. Consequently, if the major utilities compete against one another (e.g., if PG&E can market in Edison's territory), excess capacity would be available most of the time in 1996.

The use of ESSs to recover stranded investments and provide for socially desirable programs would also affect the gains from trade. For example, if a stranded cost recovery fee based upon usage is imposed, some economically efficient trades would probably not be made since the prices seen by the buyer would differ from the costs of the seller. An electric service surchage could also cause externalities to be internalized (this could be inadvertent), then some inefficient trades would probably be avoided.

1.1.3. Price transmission to reflect costs

The Blue Book does not address transmission pricing, other than to say that the "utility must provide transmission and distribution services on a nondiscriminatory basis to direct access customers." (30)

The pricing of transmission services will affect the prices of all other services in an electric system. Therefore, transmission is *the* strategic asset. Without transmission access at efficient prices, the incentives for the efficient dispatch of generation will not

be correct and full gains from trade will not be realized. Yet competitive transmission pricing and access have not been satisfactorily implemented for wholesale wheeling, much less retail.

The cost of transmission includes two components: line losses and congestion costs. Congestion costs are a complicated function dependent upon the entire grid's engineering properties and dispatch levels. Furthermore, since electricity follows the path of least resistance, transmission from one point to another often creates increased flows on several parallel lines. This phenomenon is know as "loop flow." Loop flows create externalities that further complicate the transmission pricing problem.

1.2. Mid term (make efficient choices of non-durable inputs such as labor and fuel)

The CPUC proposes PBR for the utility service sector, (35) and competition for electric services in the direct access sector. (37)

Both competition and PBR, applied separately, have the potential to provide better incentives for reducing input costs than the current procedures, which allow utilities to recover nearly all of these costs. The threat that regulators would appropriate utility profits that were consistently high could mitigate the incentives for efficiency under PBR. How the two reforms interact with each other would greatly influence the net impact on incentives to reduce costs.

1.3. Long term

1.3.1. Make efficient investments in generation

The CPUC proposes to eliminate the Biennial Resource Planning Update (the BRPU, a proceeding in which the Commission attempts to determine how much capacity will be needed and structures the acquisition process in great detail). The Commission would not regulate procurement practices of utilities for direct access customers. Capital expenses for direct access customers would not become part of the utility's revenue requirement. The Blue Book does not specify how new generation for utility service customers will be acquired. The options include continued construction by utilities, competitive auctions for purchases conducted by utilities, and negotiated long-term contracts with outside suppliers. Procedures for the oversight of procurement practices for utility service customers remain to be developed and would be based upon proposals from utilities. (32,51)

In the highly capital intensive electric power industry, investment decisions typically have the largest economic consequences. The improvement of incentives for economic investment therefore provides some of the largest potential gains from a restructuring of the industry. Under traditional cost-based regulation, the only check against inefficient investment is the prudence review, which decided whether the capital costs of new generation should be passed on to ratepayers. Under the Commission's proposed policy, the full risks (and benefits) of constructing power plants to serve direct access customers would accrue to the investors in that plant. This would greatly enhance the incentives for making efficient investment decisions.

The separation of resource procurement for direct access and utility service customers could create an efficiency problem. If resources built for the utility service sector are not allowed to serve direct access customers, even when not needed for utility service customers, the result could be a serious loss of efficiency. However, the capital costs of utility service generation will be fully recovered from ratepayers. Thus, if these units are allowed to serve the direct access market, utilities would have a competitive advantage because they would not have the same exposure to risk as the owners of capacity built for the direct access market.

1.3.2. Maintain an adequate supply of generation capacity

The Blue Book affirms the Commission's "long standing mandate to ensure that all customers receive adequate, safe, reliable, and reasonably priced electric service." (27)

There is a potential conflict between the existence of an unconstrained spot market or even a partially competitive market, in which the price of energy in the presence of excess capacity is driven down to short-run marginal cost, and the traditional practice of building substantial excess capacity to maintain high levels of reliability. Evidence from the UK suggests that long term contracts may be needed to facilitate investment in new generation. It is inconclusive whether underinvestment or overinvestment in capacity, relative to traditional practices, may result from the CPUC's proposed restructuring.

In either case, the incentives for providing reserve margins in the traditional sense would be altered. This conflict can be resolved in one of two ways: add a capacity-related surcharge to spot prices (as is done in the UK, with ambiguous results) or operate with a reserve margin determined by market forces. The latter strategy, although a departure from current practice, may be feasible. It would require further innovations in service differentiation based on the reliability of service that would allow selective load shedding to meet capacity shortages caused by forced outages. Similar service innovations have occurred in other newly deregulated industries such as telecommunications.

1.3.3. Make efficient investments in transmission

The CPUC proposes that utilities remain obligated to provide safe and reliable service. Implicit in this is the obligation to make the necessary investments in transmission. (55)

The efficiency of utility investment in transmission would depend, at least in part, on how the cost of investment is recovered. However, transmission pricing is not addressed in the CPUC order and, as noted above, is a major unresolved issue. One objective in attempting to resolve this issue would be to develop a pricing scheme that signals utilities to add capacity when congestion costs exceed investment costs. However, it is difficult to calculate either congestion or investment costs. Developing and overseeing a price schedule based upon these costs will be challenging. The problem is further complicated by the need to allocate transmission costs between the direct access sector and the utility service sector.

Strategic factors could also influence investment decisions in transmission. Some generation units have an economic value out of proportion to their operating costs because of their location in the transmission grid. In the UK, certain units ask for, and receive, a price considerably above the spot price simply because the continued operation of those units is necessary to maintain the integrity of the grid. Transmission investment could therefore dilute the value of some of these strategically located units, while raising the value of others. If the company making the transmission investment decisions owns some of these strategically located generating units, a conflict of interest could result.

1.3.4. Make efficient investments in energy-using equipment

The proposal to eliminate the BRPU would eliminate the mechanism by which the Commission has attempted to coordinate investments on the supply and demand sides. The Commission "encourages parties to propose alternative frameworks based on 'let the market decide' to replace the Update" for acquiring resources for the utility service sector. (51)

In the past, the Commission has held that energy efficiency and load management are resources that utilities should be encouraged to acquire as an alternative to new generation capacity. Part of the justification for this policy was that conservation was underfunded because of market failures. It was argued that utilities were well positioned to deal with these market failures and thereby could acquire energy conservation at lower cost than new supply. The policy of "let the market decide" is a move away from that position.

2. Equity

2.1. Deal fairly with the implicit contract that utility shareholders will recover capital investments from electricity sales (the "stranded investment" issue)

The CPUC proposes that utilities would recover the costs of stranded assets, uneconomic units constructed under the previous regulatory compact, through a electric service surcharge (ESS) that they call the "competition transition charge." (45)

The Blue Book includes an unusual definition of stranded assets (45). How this definition would work in practice is unclear. Potential beneficiaries of the competition transition charge are utility shareholders and owners of QFs. The decisive issue from the point of view of shareholder interests is whether the utilities could recover the full costs of their nuclear generating assets. The nuclear units carry a unique cost burden, due not only to their high costs but also to the high level of uncertainty about future environmental liabilities and decommissioning costs. Those uncertainties are unlikely to be resolved by the year 2002, when the CPUC's last round of reforms are due to be implemented. How much, if any, of these risks will be carried by ratepayers is a critical concern for utility shareholders. For QF owners the decisive issue is whether contracts they have for supplying power to utilities (often at very high prices) will be compromised. If the interests of both stockholders and QF owners are fully protected, the competition transition charge would initially be by far the largest ESS.

While the proposed transition charge could distribute the costs of transition to a new industry structure in the way the Commission intends, it is unclear who will bear the risks of recovering those costs. If the transition charge does not fully recover the costs of stranded assets, the Commission would face three options for recovering the remaining costs. First, they could adjust the transition charge for all direct access and utility service customers. This would imply altering the terms of contracts already signed by direct access customers. Second, the Commission could interpret the terms of direct access contracts as binding and place the burden of the remaining cost recovery on the utility service customers. Third, the Commission could decide that utility shareholders should bear all the risks of transition and not make up for any shortfall in the cost recovery. This last option may damage the credibility of the Commission's implied commitment to provide for recovery of future investments in the sectors of the industry, such as transmission, that remain regulated.

The Blue Book proposes to allow utilities to compete for direct access customers by permitting them to negotiate prices directly with those customers. Utilities could offer any price that was below the tariffed rate and above their marginal cost. (44)

This practice would not be revenue neutral for the remaining utility service customers. Providing price cuts to the direct access customers would cause revenue loses that would need to be recovered from remaining customers or utility shareholders. The critical question is whether this practice would make utility service customers even worse off than if the direct access customers left the utility system completely.

Another important factor in the recovery of stranded costs is the extent to which utilities divest themselves of generation. If utilities transfer their most efficient units to their unregulated affiliates, the remaining portfolio of generating units in the regulated sector could appear even more uneconomic. A transfer charge could mitigate the inequity that would result from such a process. When the burden of uneconomic units to be borne by shareholders is calculated, it will be appropriate to consider the benefits to shareholders of other units that have economic values in excess of their book values.

2.2. Obligation to serve

The CPUC proposes to maintain the traditional obligation to serve ("The utility remains the provider of last resort for all consumers." (31)), with some modification. It proposes that customers who have chosen direct access must give 12 months notice in order to again take service from the utility at the tariffed rate. If notice is not given, ". . . the returning customer must fairly compensate the utility for the cost actually incurred in arranging for and delivering service until the twelvemonth period has expired." (46)

This is an area where the competing strategies of the CPUC collide. The Blue Book appears to encourage exit from the "commodity business" altogether by promising reduced regulatory scrutiny for those who do. (A3) The definition of commodity business is ambiguous here. If exit from the commodity business is interpreted to mean exit from the bulk power business, then a utility is no longer the obvious choice to be the supplier of last resort. Furthermore, the concept of an obligation to serve is not consistent with a

competitive market for generation. In a competitive market, this concept is replaced by the notion of willingness to serve at a certain price.

2.3. Equity for low-income consumers

The Commission "will not tolerate any retreat from [their] continued efforts to ensure California's consumers, including low income consumers, enjoy universal access to a basic affordable and up-to-date package of electric services."(56) The Commission propose to work with the Legislature and other stakeholders to find alternatives to ratepayer-funded low income programs. Meanwhile, the Blue Book proposes to fund such programs through an ESS. (57)

2.4. Provide for equitable distribution of costs among the different classes of customers

The CPUC proposes that the commitments implied by the allocation currently assigned to the different consumer classes should remain intact. The Commission "will not revisit the allocation [of costs] currently assigned to the different consumer classes."(47)

It is unclear how this proposal would be implemented. One possibility is that the Commission intends to adjust prices so that the overall share of costs borne by each class does not change. If competition lowers average costs as the Commission intends, all classes would share in the savings proportionate to their previous burden of costs. If this is the Commission's intent, it raises the question of whether the same equity rules should apply to the sharing of savings as applies to the sharing of historic costs. One could argue, for example, that the savings should be proportional to the risks undertaken to realize the savings. If entrants into the direct access market must share their savings with other consumer classes, their incentive to take cost reducing actions will be reduced. In any event, the creation of an entirely new and steadily expanding class of consumers would make the application of any system of cost allocation challenging.

3. Technical Efficiency of the Transmission and Distribution Network

The Commission intends to introduce competition only in the generation segment of the industry. "Transmission and distribution services, as well as system control and coordination services, will continue to receive regulatory oversight." (31)

The behavior of electricity as it is transmitted through a network makes electric power unique among industries. Deregulation of the electric power industry faces challenges that did not arise in natural gas or telecommunications because of the nature of the transmission process.

3.1. Satisfy the technical constraints of grid operations (avoid catastrophic transmission failures)

The CPUC proposes that ". . . the utility's stewardship of, and responsibility for, system controls and coordination [would] remain intact . . ." (55)

A large number of bilateral transactions presents considerable challenges to maintaining the integrity of a network. It is generally accepted that some kind of centralized coordination is required if the grid is to be operated reliably. The CPUC proposal evidently envisages the

utilities in the coordination role. This role requires the utilities to have some level of short term control over bilateral transactions.

Under such a system, a vertically integrated utility has a potential conflict of interest between its network coordination responsibilities and its commercial interests. A utility can create a competitive advantage for its own units based upon its own interpretations of the technical requirements for network security. Given the immense complexities involved in maintaining a network, regulatory oversight of utility practices would be very difficult.

3.2. Realize economies of scale from load diversity and shared reserve capacity

A footnote in the Blue Book states that voluntary regional transmission groups (RTG) are a superior alternative to a single utility control and coordination mode, and as such are expected to replace existing institutional arrangements. (55 fn) Commission President Fessler, in his concurrence to the Blue Book, observes that, in the presence of a UK-style pool, his "fears of a threat to the reliability in the face of inevitable contract failure are substantially reduced." Without a pool, he continues, "we are ill advised to shift reliance to bilateral contracting which will almost certainly feature parties legally domiciled in differing and distant jurisdictions."

Where network issues are concerned, the competing strategies of bilateral retail wheeling and a UK-style transmission pool become the most difficult to reconcile. How the benefits of a diverse demand load and resource base are exploited would depend on what role evolves for the owners of the grid. A greater level of cooperation between large networks along the lines of an RTG would presumably increase the efficiency of supplying the overall load. Without a UK-style pool, the reliability of the network is more dependent on the individual fulfillment of contractual obligations. Due to the interlocking nature of an electric transmission network, one party's failure to supply could affect the entire network, not just that party's contracted customer. The emergence of contingency contracts, derivative markets, and electricity brokers who arbitrage the cost difference between loads could potentially restore many of the benefits of a diverse load in the absence of a pool.

The Blue Book seems to rely upon a greater degree of cooperation between members of RTGs than currently seems likely. The Governing Agreement of Western Regional Transmission Association, the only RTG filed with the FERC to date, concentrates on such issues as qualifications for membership and dispute resolution and does not provide for operational coordination between members. It appears that the focus of the current generation of RTGs will be limited to the facilitation of information sharing and the coordination of planning between members. They will not, in the near future, create the kind of regional "tight power pools" that would assume the operational control and coordination roles now filled by individual utilities.

4. Quality of Service

4.1. Allow each customer to obtain desired levels of service

The CPUC proposes that in the direct access market utilities would unbundle the current service package. Traditionally bundled services such as energy, transmission access and coordination, and backup generation would be provided separately. Prices for the unbundled

services should reflect utilities' marginal costs. (40) The Commission apparently expects that services would remain bundled in the utility service sector. (35)

The unbundling of some services is necessary to facilitate the direct access market where there would be services (such as transmission access) that only the utility can provide. The development of innovative new services, such as interruptible tariffs, provides the potential for an even higher level of unbundling. There are reasons to believe that efficiency gains would also result from this type of unbundling (e.g., providing different levels of reliability) in the utility service sector. However, it is unclear how unbundling in the utility service sector could be accomplished under PBR. A potential problem with PBR is that it can provide incentives to reduce rates at the expense of other attributes (such as service quality) of the bundle.

4.2. Allow for the addition of desirable new services

The Blue Book observes that advances in telecommunications will change ". . . the way the utility can price products and services, and . . . the way consumers can directly determine which services to select and when . . " (22)

Utilities' investments in communications technologies have placed them in a position to provide new energy services such as real-time pricing and direct load control. In addition, the communications infrastructure being installed by utilities could enable them to provide information services unrelated to energy. The implications of such a diversification for PBR and for cost allocation have not yet been addressed.

5. Externalities and Public Goods

The CPUC proposes "to consider establishing an additional line item to reflect the cost of funding utility programs to which competing nonutility providers are not subject . . . To the extent the utility continues to fund these important programs, we believe that direct access customers should continue to contribute." (45 fn) The Commission believes that California ought to examine alternate funding arrangements for such programs. (57)

5.1. Renewable resources and environmental quality

The Commission believes that "the time is ripe to begin to work with the Legislature to reexamine current laws requiring that a portion of the utility's infrastructure investment be set aside for renewable resources." (53) The Blue Book points out that any new resource additions in California would still have to meet the conditions of California's Environmental Quality Act (CEQA). (52)

The CPUC's ability to intervene on environmental issues is limited to the oversight of resource selection and utility operations as well as the setting of rates. Other government institutions, such as the EPA, State Legislature, and Air Quality Management Districts have a clearer mandate and broader power to implement environmental regulations. Many of the positions taken in the Blue Book are consistent with the view that environmental regulation should be left to those institutions.

In the past, the CPUC has employed two methods to address environmental concerns: "set asides" for renewable resource capacity and "adders" (penalties or bonuses based on emissions) on the costs of generating units for use in integrated resource planning and the BRPU bidding process. The Commission explicitly proposes an end to the use of set asides and, by eliminating the BRPU, seemingly rejects the further use of adders. The Blue Book does state, however, that "despite the state's success in enhancing resource diversity and maintaining environmental quality, these important goals will continue under any restructured resource procurement program." (32) However, only the procurement of resources serving utility service customers would be highly scrutinized. Most of the costs of the continued pursuit of those goals might therefore fall upon utility service customers.

Since CEQA would only apply to generating units built and operated in California, some of the generation competing for customers in this state could be "dirty" units from other states or other countries. In the past, the CPUC has taken positions that try to avoid the apparent "exporting of pollution." The Commission has held that emissions impacts should be treated identically regardless of geographic location, although they have differentiated impacts according to the status of the air quality district from which the emissions flow. The strategies outlined in the Blue Book seem to reverse that policy.

The Blue Book suggests that objectives of current laws requiring utilities to set aside investment for renewable resources can be satisfied by making more choices available to consumers. The Commission views its policies as an extension of SCE's proposals for "green pricing." With green pricing, consumers could volunteer to pay a surcharge that would support investment in renewable resources. (53) The Blue Book notes that "all customers would receive the benefits [of more diverse, less polluting resources] whether they choose the green price or not." (53 fn)

The proposal that some customers voluntarily pay for benefits that accrue to all customers presents incentive and equity problems. It is generally accepted that programs subject to a "free rider problem" will be underfunded if participation is voluntary. Furthermore, if programs are funded by a voluntary surcharge, costs will not be equitably distributed unless an additional mechanism is introduced to do so.

5.2. Energy efficiency

The CPUC proposes to eliminate the Energy Rate Adjustment Mechanism (ERAM) for the direct access sector. The purpose of ERAM is to guarantee that utilities collect revenues no greater and no less than their revenue requirement. It removes a disincentive for reducing energy sales by promoting energy efficiency. The Blue Book further proposes that ERAM focus exclusively on sales lost due to energy efficiency programs in the utility service sector. Shareholders would fund and potentially benefit from any energy efficiency programs offered in the direct access market. Policies requiring utility shareholders to fund all utility energy efficiency programs will be considered. Utilities would be required to obtain competitive bids for all future demand-side management programs designed to serve utility service consumers. (55)

As noted earlier, the Commission appears to be moving away from the position that energy conservation is a resource that utilities should be encouraged to acquire as an alternative to

new generation. However, the Commission still wants to further "the state's and this Commission's continuing and aggressive efforts to promote investment in cost-effective energy efficiency." (54) There are at least three alternatives that could be chosen for dealing with energy-efficiency programs in a restructured industry: ratepayer-funded programs could be phased out, they could be provided for utility service customers only, or they could be funded through an ESS and made available to all customers. The Blue Book does not consider the third alternative, and it is not clear which of the first two it supports. One interpretation of the Commission's language is that as each class becomes eligible for direct access, it would lose the option of receiving ratepayer-funded energy efficiency services. Thus all customers in that class would be removed from energy efficiency programs, whether they select direct access or not. Another interpretation is that only those customers who actually elect to participate in the direct access market would no longer be eligible for these services.

The Blue Book states that "We agree with those who assert that energy efficiency services represent a strategic asset when competing for market share and attempting to prevent bypass." The Commission believes that both utilities and Energy Service Companies (ESCOs) will aggressively compete to provide services to all consumers. (54)

If the CPUC adopts the position that all customers in a class that is eligible for direct access are no longer eligible for ratepayer-funded energy-efficiency programs, it will remove the incentives for utilities to focus efficiency programs on the customers most likely to choose direct access.

5.3. Research and development

The Blue Book does not address utility supported research and development.

The Commission has consistently allowed and frequently been very supportive of ratepayer funded research and development. Continuation of this activity is challenged by both retail competition and by PBR. Commission rules currently prohibit utility shareholders from directly benefitting from ratepayer-funded research and development. Under PBR, shareholders may be penalized for the higher electricity rates that result from the support of a research and development program. If this happens, utility management would have a strong incentive to reduce research and development expenditures.

In the direct access sector, the incentives for research on technologies whose benefits can be appropriated for competitive advantage would increase. However, electricity service providers would have much less incentive to pursue more general research that cannot be immediately used to the advantage of the developer. Retail competition creates a class of electricity suppliers who are not under any obligation to fund this kind of "public good" research but may benefit from such research conducted on behalf of the utilities' ratepayers. This gives the new suppliers a cost advantage. This is a problem that is in many industries. If it is determined that continued funding of research and development should provided, such funding could be implemented through an ESS or taxpayer supported funding at the State or Federal level.