Achieving Energy Efficiency Objectives through a Competitive Energy Efficiency Service

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For more than a decade, state and federal energy policy-makers have crafted regulations and legislation to establish a prominent role for electric and natural gas utilities to promote energy efficiency. The more recent debate on ''restructuring'' is replete with descriptions of the threat to utility energy efficiency activities in a competitive industry.

Recent activities in some states suggest that it may be possible to pursue public interest objectives such as energy efficiency with mechanisms that produce a better fit for the transition to a competitive energy industry. These mechanisms include ''surcharges'' (a mechanism for the recovery of costs from energy efficiency activities that are paid for by ratepayers) and ''independent administrators'' for some or many of the functions currently performed by utilities operating in an Integrated Resource Planning environment.

This paper describes an Energy Efficiency Exchange (EEX) that would be responsible for the pursuit of energy efficiency objectives. The goal of an EEX would be to create a viable competitive energy efficiency services industry, capable of achieving energy efficiency objectives during and after the transition to a competitive energy industry. During the transition period, many of the functions currently performed by utilities—market assessment, customer information and assistance, and the administration of ''procurement'' activities—would be performed by a combination of public, private, and private/non-profit entities. The utility would play no role, a minimal role, or as a competitor in bidding for access to, and use of, the ratepayer funds used for EEX information exchanges and financial transactions.

THE HISTORIC AND CURRENT ROLE OF THE UTILITY IN PROMOTING ENERGY EFFICIENCY

Until about the 1980s, the utility played virtually no role in promoting energy efficiency. This is not surprising, since it was not until the 1970s that energy efficiency itself was recognized as a worthwhile public policy objective.

During the 1980s and into the early 1990s, legislative and regulatory initiatives produced an increasingly complex and comprehensive set of regulations that accepted the following assumptions:

(1) Advances of technology have created a substantial opportunity for reducing energy consumption from appliances and buildings in virtually every sector.

(2) The markets for these energy efficiency measures are riddled with a variety of barriers that prevent many customers from knowing about and/or investing in the efficiency opportunities.

(3) Utilities can, and should, act as a primary agent for informing customers and providing financial assistance to customers to undertake energy efficiency investment. opportunities that are beneficial to customers in the long run and society as a whole.

(4) Traditional regulations can, and should, be reformed in such a manner that it is in the interests of the utility to intervene in the market to capture the energy efficiency potential.

In the context of the evolving legislative and regulatory initiatives to promote energy efficiency, these four ''bottom line'' assumptions produced what became known in the regulatory community as the ''Integrated Resource Planning (IRP) framework.'' [Hirst and Eto] Although these four foundational assumptions were at least partially reflected in state commission regulatory activities by the early 1980s, it was not until the late 1980s and early 1990s that many states began to move aggressively in their efforts to rely on utilities to pursue energy efficiency objectives.

The distinguishing feature of state initiatives in the late 1980s and early 1990s is related to the fourth foundational assumption noted above—the need to change the regulation of utilities so that it was in their interests to pursue energy efficiency objectives. Riding the wave of environmentalism during this period, many states embarked on the course of developing and adopting policies that removed the regulatory barriers of traditional regulation that made it difficult

for state commissions to rely on utilities to pursue energy efficiency objectives.

THE RESTRUCTURING TIDAL WAVE

In some states the principles and objectives of the IRP framework have been modified, if not replaced by, greater interest in establishing a competitive energy industry. ''Traditional'' IRP has been equated with antiquated notions of excessive government involvement. New objectives are associated with lower rates produced by competition, and competition producing greater customer choice.

The new priorities of many states moving toward energy industry restructuring can be reduced to two basic objectives: (1) to enhance customer choices for energy services; and, (2) to create a viable, competitive, energy industry. These objectives and associated changes in regulation are typically viewed from the ''supply side.'' ''Choice'' is first and foremost associated with the ''right'' to choose between alternative providers of electricity. ''Competition'' is first and foremost applied to a industry that consists of multiple providers (or potential) providers of electricity. It is important, however, to establish the objectives of customer choice and competition in a manner that clearly accommodates the ''demand-side.''

THE DEMAND-SIDE DIMENSIONS OF CUSTOMER CHOICE AND COMPETITION

A familiar precept in the energy efficiency literature is that utility customers are not interested in energy per se, but the end use services that energy can provide. This notion is also closely aligned with the oft-cited argument that customers do not really care about *rates* (how much energy costs per unit) but rather *bills* (how much it costs to provide the heating, lighting, and other services and goods produced by the energy-using equipment).

When viewed in the context of customer choice, this precept is perhaps best understood to mean that the interests of customers are best served if they are given the tools for maintaining or improving the energy services they want at a lower cost. If customers are given the opportunity to chose between providers of energy (the focus and a primary objective of most restructuring efforts), a given set of energy services might become available at a lower cost by simply procuring the energy at a lower rate. A broader understanding of customer choice, however, suggests that customer interests are also served if they have a meaningful opportunity to chose to invest in energy-reducing materials and equipment, instead of (or in addition to) simply acquiring energy at a lower rate from competing suppliers.

A central promise of restructuring is the enhancement of customer choice in terms of being able to shop around for alternative (and presumably lower cost) providers of energy. At best, it might be assumed that this competitive market will evolve to the point where energy providers will include offerings of energy *efficiency* services because this is, according to some, similar to the experiences in other industries that have gone through ''deregulation.'' [Newcomb]

It cannot be proven that the creation of competition to provide energy will or will not also induce the development of a competitive energy efficiency services industry. Rather than try to argue the question of whether this will happen, it is more useful to develop the case for the kinds of changes in regulation that are more likely to support the enhancement of customer choice by supporting the development of a competitive energy efficiency services industry.

THE EMERGING REGULATORY AGENDA

With an expanded view of ''customer choice'' and ''competition,'' it is possible to better understand how to move ahead with the promise of restructuring without necessarily sacrificing energy efficiency objectives. For states that wish to move toward restructuring *and* retain energy efficiency objectives established with a set a IRP regulations, the regulatory agenda should include the establishment of new mechanisms and policies. These mechanisms, described below, include:

(1) a surcharge (to create a source of funds to enhance customer choices for energy efficiency services);

(2) the administration of the surcharge funds by an independent administrator; and,

(3) a set of institutional arrangements that accommodate the surcharge and administration-related exchanges of information and financial transactions necessary to create a viable, sustainable, competitive energy efficiency services industry.

SURCHARGE

In a regulatory environment that places the utilities in a central role in the pursuit of energy efficiency objectives, a central and recurring issue is the question of how much the utility should spend on energy efficiency. Since it has been

ratepayer dollars that the utility is spending, the funding question has been inextricably tied to the need for the utility to obtain Commission approval of an energy efficiency program budget for a designated period of time. A considerable amount of time may be required of the utility, Commissions, and participants in Commission proceedings to address the issue of how much should be spent on energy efficiency.

An alternative would be to simply fix the amount, perhaps as a percent of revenues, that utilities should recover from ratepayers to fund DSM activities. This does not answer the funding questions in terms of determining the right amount. Nor is there a guarantee that the ''rate design'' implications of the surcharge are easy to answer. It may, however, remove the program funding level issues from protracted and recurring dispute about whether and how to link funding to IRP goals, objectives, and proceedings.

For purposes of this paper, the surcharge described above is referred to as a System Benefits Charge (SBC). [Regulatory Assistance Project] An SBC simply refers to a surcharge, shown on customer bills along with other types of itemized charges, that is non-bypassable (all customers, regardless of their choice among competing providers of energy), and presumed to be applicable during the transition to a competitive energy industry.

INDEPENDENT ADMINISTRATOR

Establishing an SBC, by itself, does not address the issue of who should administer the funds, nor any of the myriad of associated questions of how the funds will be used (which customer segments, which technologies, etc). [Baxter; Eto, Goldman and Kito] The simplest approach would be to determine that the utility would continue to administer the SBG funds, much as they do under IRP regulations.

An alternative is to use the utility as a vehicle for raising revenues to fund energy efficiency activities (i.e., through the SBC), but to then turn these revenues over to a non-utility entity for administration. This appears to be the direction taken by the California PUC in its 1995 Restructuring decision [CPUC,1995]:

- ''By January 1, 1997,[1] energy efficiency costs should no longer be embedded in electric rates and instead should be collected as part of the public goods charge applied to retail electric sales.'' (Conclusion of Law 85)

- ''After a short transition period, we believe the funds collected through a surcharge for energy efficiency should be competitively allocated by an independent, nonprofit organization . . .'' (page 156)

With these two provisos, the California PUC signaled a potentially significant shift to the reliance on an entity other than the utility to pursue energy efficiency objectives.[2] The restructuring decision provides no real reason for pursuing this shift, and very little direction was provided in the California restructuring decision about the nature of this ''independent, nonprofit'' entity that would administer surcharge funds. The host of details needed to make this entity a viable replacement to the energy efficiency objectives and functions currently provided by the utilities are to be worked out through Working Groups and future proceedings.[3]

It should be clear that a viable Independent Administrator of SBC funds cannot operate in a vacuum. No commissioner or legislator worthy of their salary would accept the simple transfer of revenues collected by a regulated utility to an entity that is completely ''independent.'' In its broadest sense, there will need to be a set of terms and conditions, captured in a contractual arrangement between a public agency and the Independent Administrator, that provide at least policy direction to the Independent Administrator on fundamental procurement issues (allocation, distribution, accountability, relationships with utilities, utility affiliates, non-utility private firms or other entities that may be selected by the Independent Administrator to actually install energy efficiency measures).

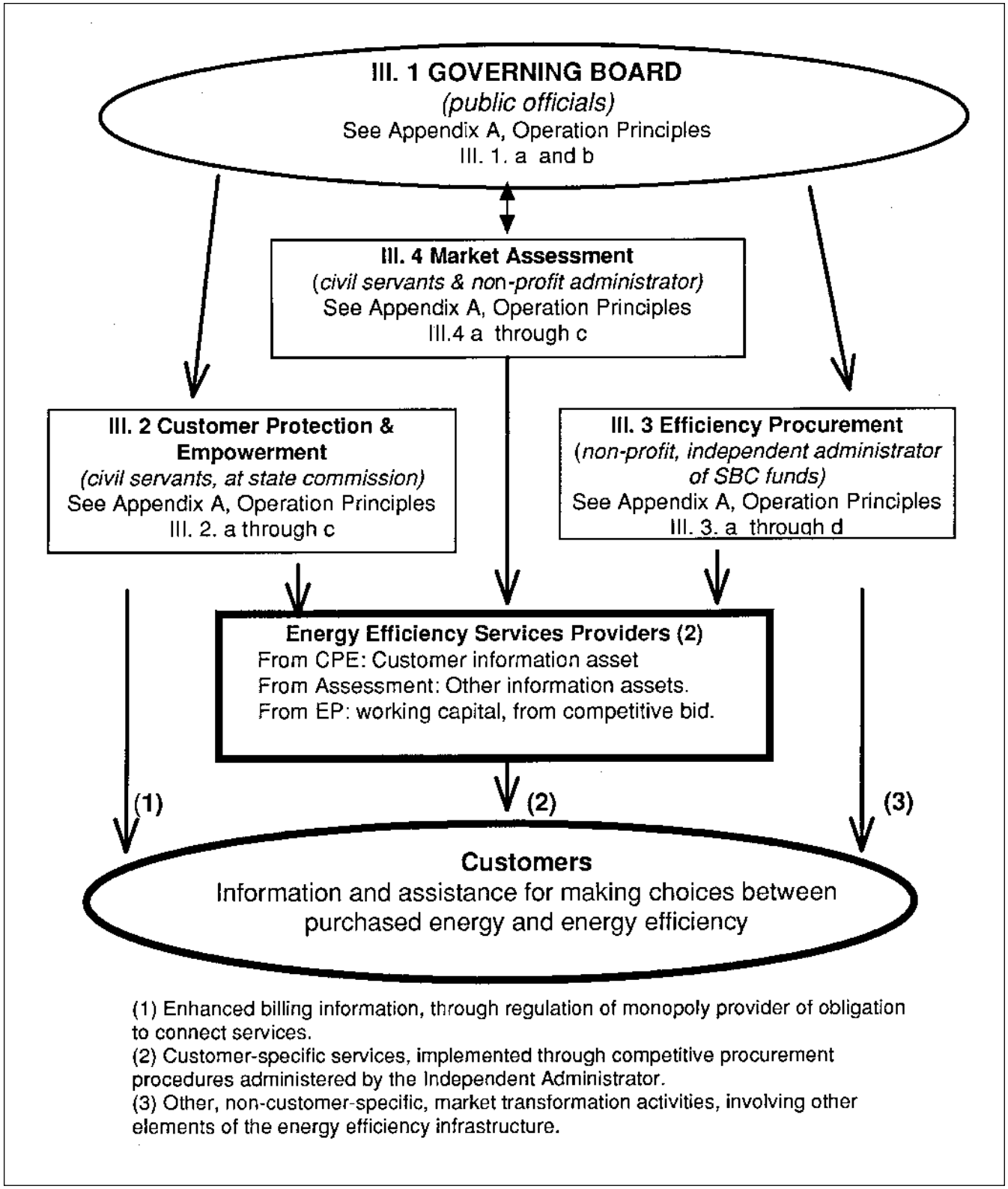
The Independent Administrator, in other words, should be thought of as an entity with substantial administrative responsibilities for ensuring that SBC funds are available to customers to procure energy efficiency services and products, acting under a contractual arrangement with a public agency that establishes the institutional environment in which it is expected to operate. For the purposes of this paper, the ''institutional environment'' is referred to as the Energy Efficiency Exchange (EEX).[4]

AN ENERGY EFFICIENCY EXCHANGE

Figure 1 depicts a ''model'' structure of an Energy Efficiency Exchange. The responsibilities and functions suggested by the diagram provide a useful, albeit somewhat generic and skeletal, rendition of the workings of the independent, nonprofit entity. Figure 1 does not represent a organizational chart of the EEX since the EEX need not be an ''organization'' in the conventional sense. The EEX is a set of relationships (information exchanges and financial transactions) between the entities that participate in and shape the energy efficiency industry and markets, including the market transformation effects from the use of SBC funds.

For purposes of simplicity, the relationships depicted in Figure 1 apply to the situation where a state PUC has adopted a SBC for the pursuit of energy efficiency benefits formerly

Figure 1. *The Energy Efficiency Exchange*



acquired by the utility, and to be used by an independent administrator (instead of the utility) for the continued procurement of energy efficiency services.

Before describing the key features of the EEX structure, it is useful to consider the elemental—yet critical—matters associated with the basic purpose and objectives of the EEX. A possible statement of purpose is captured in the following ''mission statement:''

- The primary purpose of the Energy Efficiency Exchange (EEX) is to promote the wide-spread use by customers of cost-beneficial energy efficiency measures by empowering customers with quality information regarding energy efficiency choices and creating a competitive energy efficiency services industry.

The primary objectives of an EEX might be articulated by language such as:

- To transform the market for energy efficiency products and services to the point where public assistance is no longer necessary;

- To reduce market entry barriers for the providers of energy efficiency services; and,

- To assist energy consumers in making decisions and choices about their energy service by reducing market barrier costs in the selection of cost-beneficial energy efficiency measures.

With these kinds of purpose and objectives, it is possible to describe additional operating principles of an EEX, as depicted in Figure 1.

The Governing Board—Policy-Setting for the EEX

As suggested by Figure 1, the EEX would be governed by a Governing Board. The Board would be responsible for developing and enforcing the regulations that affect the allocation of surcharge funds, and ensuring the institutional capability of fulfilling the mission statement and objectives of EEX.

There are many possibilities for constructing Board membership. To the extent this EEX is created from an explicit intention of using the utility revenue-collection powers but maintaining accountability for the use of these funds, it is critical that the state public utility commission play an prominent role on the Board. Board composition need not consist of all commissioners from the state PUC, but at least one or two members of the Commission should serve as members of the board of the EEX in order to maintain a minimum level of accountability linkage with an Independent Administrator.

Other positions on the Board might come from any or all of the following entities that already exist in many states: a state energy office; a state consumer affairs office; the state legislature; a statewide or regional organization representing municipal utilities.

Regardless of the composition of the board, the proper discharge of its public responsibilities will require periodic public proceedings to develop, modify and enforce a set of policy directives and regulations to guide the activities of the various functions of the EEX. Three functions of the EEX are shown in Figure 1—Procurement, Customer Protection, and Market Assessment—with each function representing a critical set of responsibilities and activities. Each function, representing key functions of the energy efficiency ''resource asset'' formerly dominated by the utility, is described below.

The Procurement Function (Administration and Implementation) of the EEX

In an environment where a monopoly utility plays the central role in pursuing energy efficiency objectives, procurement issues are addressed (typically) in the context of a state commission exercising its responsibilities to oversee utility expenditures and utility efforts to ''manage'' the demand for energy. The utility typically provides for both the administration and implemention aspects of procurement, including direct customer contact. The utility is typically left to develop and manage a list of eligible products and certified providers, and to make allocation decisions under fairly broad guidelines established by the state commission. In an IRP regulatory environment, these allocation functions are often the focal point of policy issues and disputes among stakeholders involving issues of resource planning goals, the reconciliation of utility profit interests and ''lost sales,'' and equity.

As depicted in Figure 1, the procurement function of the EEX is represented by responsibilities for an independent administrator in three areas:

(1) The development and management of a list of certified energy efficiency service providers who are eligible to compete for SBC funds;

(2) The allocation of funds to energy consumers, through qualified energy efficiency service providers, on a basis that maximizes the benefits, and minimizes the costs, to all energy consumers who contribute to the surcharge; and,

(3) Other activities that transform markets by affecting the ''upstream'' elements of the energy efficiency infrastructure for energy efficiency products and services.

Instead of relying on a procurement function that is inevitably shaped by utility interests, including their profit interests, the procurement function and responsibilities would be performed by a non-profit entity—an Energy Efficiency Independent Administrator (EEIA).

It is important, however, that this procurement function not be administered in a manner that smacks of yet another bureaucracy with a large staff and its own interests. The key operational characteristics of procurement function should include implementation mechanisms with a heavy reliance on private sector, for profit, entities. Perhaps the best means of attaining this status is a requirement that implementation activities rely on a fully competitive, ''market-driven,'' process for the disbursement of SBC funds to customers.

Creating an effective competitive procurement process will constitute a key challenge for the EEIA. The efficacy of the EEIA in performing this function will hinge largely on the operational definition of ''competition.'' Defining the conditions of competition necessarily involves basic policy decisions regarding which entities are allowed to compete for the use of surcharge funds.

The options for eligible bidders may seem simple or obvious. They are not. Perhaps the most tricky issue will be the eligibility of the utility to compete for procurement funds. Whether utilities should be allowed to participate in the competitive procurement process may depend on the structure of ''the utility'' and on the types of regulations that govern utility operations.

For example, the Governing Board may determine that it is inappropriate for a utility to compete if the utility: (a) is investor-owned and vertically integrated (generation, transmission and distribution); (b) is governed by a set of rate-making regulations that erodes corporate profits from reductions in demand; and/or (c) does not have an ''equal access'' mechanism in place for customer billing data.

Eligibility of the utility will also need to be carefully considered and scrutinized in the situation where a potential bidder is an unregulated affiliate. If may be appropriate to exclude such an entity from participation in the competitive procurement process if the affiliate is part of a corporate structure which: (a) produces profits for the parent company from increased sales; and/or, (b) does not operate under strict and enforceable walls of separation between utility affiliate transactions that might permit preferential treatment in a bidding competition (such as preferential access to billing data).

Eligibility issues will also persist for entities other than ''the utility.'' Municipal utilities might be allowed preferential treatment and exclusive rights to ''their'' share of the surcharge funds to promote energy efficiency in their jurisdictions. In some cases, local governments may wish to compete for access to surcharge funds and assume an active role in providing energy efficiency services in their jurisdictions.

Beyond the eligibility issues, a plethora of issues will need to be addressed regarding the selection criteria. In a very general sense, a basic policy dilemma of pursuing (and awarding) ''the most cost-effective'' bids versus bids that are comprehensive in scope (even though less cost-effective) will need to be addressed. In addition, there are numerous bid-specific issues that will need to be confronted. [Goldman and Kito, 1994]

The efficacy of the IAEE may very well be determined by how well it confronts the question of what constitutes a ''cost-effective'' or ''cost-beneficial'' bid. The ''cost'' side of a bid is usually fairly obvious. The ''benefit'' side of the equation, however, may be increasingly difficult to determine in an environment where the long term value of cumulative reductions in load from the energy efficiency projects is diluted or distorted by an aversion for long term planning and an affinity for short term price effects.

The procurement function also includes a set of activities identified in Figure 1 as ''other market transformation activities.'' The literature in recent years is replete with descriptions of activities that go beyond the direct provision of services to customers in an attempt to transform the market by affecting other elements of the energy efficiency industry infrastructure. Primary examples typically include efforts to encourage the design, development and commercialization of new, high efficiency appliances by dealing directly with appliance manufacturers. The EEIA of an EEX could very well be more effective than utilities in undertaking these kinds of market transformation activities.

As depicted by Figure 1, the EEIA itself will not need to confront and resolve the numerous procurement issues. To be effective, the EEIA will need to operate under carefully developed policies and directives from the Governing Board of the EEX. In order to ensure congruity between the procurement function and the overall objectives of the EEX, these procurement directives will need to be developed with the assistance of a public participation process and, as discussed below, customer protection and empowerment activities.

The Consumer Protection Function of the EEX

Providing consumer protection—from fraud, market power abuse, and the invasion of privacy—is a long-standing public

function. In the case of energy services provided by a monopoly utility, the regulation of that utility is itself a consumer protection function.

In a restructured industry characterized by multiple providers of multiple services, it is likely that a more explicit and carefully prescribed form of consumer protection is warranted. If customers are expected to make informed choices, and the results of their choices more directly drive the supply of and demand for energy, then public policy issues associated with customer protection become more akin to customer ''empowerment.'' If customers are provided adequate protection and the information necessary to make informed choices, then customers become empowered with the basic instruments for making decisions that correspond with public policy goals.

As suggested by Figure 1, a Consumer Protection and Empowerment (CPE) ''division'' of the EEX would be responsible for three important sets of activities: (1) The dissemination of information to ratepayers regarding qualified energy service providers; (2) the development of advanced metering systems;[5] and (3) The development and management of mechanisms that will maximize access by qualified energy service providers to customer billing data, while maintaining basic customer confidentially rights.

Under conditions of a regulated utility monopoly, these two consumer protection responsibilities are part and parcel of the regulatory oversight of utility energy efficiency programs. During the course of administering their programs, utilities typically provide customers with information about which companies (and/or associated technologies) were eligible for utility rebates or loans. In those instances were utilities hire private companies to help implement their programs, even customer billing data has been provided to these energy service companies. Advanced meters (e.g., Time of Use and Real Time Pricing) have been promoted through ''load management'' programs and rate design considerations, providing customers with additional service options and better understanding of the relationships between usage and their bills. Energy consumers benefited from this utility-provided function in the form of improved information about quality products and services associated with their energy efficiency choices.

These customer protection and empowerment activities can also be provided without the utilities playing the central role. In the context of the EEX, these consumer protection services should be assumed and responsibly administered under the policies developed by the Governing Board of the EEX.

Probably the most critical and controversial consumer protection function will be the development of mechanisms that will maximize access by qualified energy service providers to customer billing data, while maintaining basic customer confidentially rights. This function is closely related to the larger EEX objective of reducing market entry barriers of energy efficiency service providers. ''Access to information'' by market entrants is more typically seen in terms of potential providers of energy, as noted in the CPUC's Restructuring decision [CPUC,1995]:

> ''As a monopoly provider of integrated generation, transmission, and distribution services, the incumbent utility has access to considerable information about its customers, including individual load profiles and billing histories. In a competitive arena, access to such information is quite valuable for marketing purposes. Because this information is not automatically available to the utility's competitors, the incumbent utility has a major advantage that could allow it to target and sing up preferred customers before its competitors can.'' (page 108)

This CPUC citation clearly has a ''supply-side'' perspective. The same competitive advantage of utilities can be demonstrated for energy efficiency services. [Schultz, 1996] With the EEX, a customer protection and empowerment function would address issues of market entrant information needs, without undue threats to customer privacy, for services related to energy efficiency.

Customer empowerment could very well become a critical, if not central, matter in the context of a competitive energy industry. In the context of an EEX, customers would be empowered with the kind of information that would assist in making decisions about energy efficiency services, not just information regarding the choice of energy providers. Energy efficiency services market entrants, not just energy providers, would have access to the kinds of customer information that will aid in their ability to provide a full range of customer choices.

The Market Assessment Function of the EEX

Under an IRP regulatory framework, the utilities are typically left with major responsibilities for identifying least cost energy efficiency potentials, designing programs, and evaluating the effects and effectiveness of the programs. With the proposed EEX, these kinds of activities would be performed by a separate entity. This market assessment function would include making recommendations to the Governing Board on such matters as target markets and market barriers for the IEAA to address in its procurement activities. The market assessment activities, however, would include a broader range of activities, including:

- energy efficiency opportunities that exist in the market, including new and emerging energy efficiency technologies and demand-side applications of renewable resources;

- market barriers to the wide-spread acceptance of energy efficiency measures and services; and,

- market entry barriers and areas of potential or actual market abuse within the energy efficiency services industry.

In a restructured industry that does not rely on the utilities to meet energy efficiency objectives, these critical assessment functions should be more directly undertaken by a public agency or agencies, as part of an EEX. This is particularly true in the area of studies that address market power. Market power is clearly an issue that will need to be addressed in terms of ''energy providers.'' The point here is that there is an energy efficiency services industry that is (or should be) part of the evolving energy industry, that market power concerns should include this element of the energy industry, and that the assessment of these issues should be an integral part of an EEX.

CONCLUSIONS

The test of efficacy of the EEX is represented in its ability to meet the three elements of service shown in the Figure 1 ''Energy Consumer'' box:

- Information regarding qualified EE Service providers (from Consumer Protection and Empowerment);

- Information and financial assistance regarding efficiency choices (from EE Service Providers, including winners of competitive bids conducted by the EEIA);

- Beneficiaries of market effects from ''other market transformation'' activities (via the EEIA).

These ''bottom line'' services are virtually the same as those provided in states that operate under an IRP framework. The means of ensuring the continuation of these services, however, are fundamentally different since this could occur with a minimal role for the utility.

If successfully implemented, the primary goal of promoting energy efficiency would be realized with utilities serving largely as the revenue collector for surcharge funds. Any significant role for the utilities beyond that will depend on the terms and conditions for eligibility to compete for access to these funds through the competitive procurement process. The utility (or its affiliates) could, at most, become one of many potential providers of various kinds of energy efficiency services.

In the context of the move toward restructuring, the functions and activities associated with the EEX should prove to be highly compatible with the primary goals of restructuring. Customer choice will be made more meaningful by the continued or expanded opportunity to chose among multiple providers, including providers of energy efficiency services. Competition should be enhanced by the existence of an industry competing to inform and assist energy consumers in making the choices about the wider array of options to purchase energy at alternative rates and/or to invest in energy efficiency.

To retain energy efficiency as a high public policy goal in a restructured energy industry, however, it may be necessary to create a fundamentally different regulatory mechanisms and arrangements than those characteristic of an IRP framework. These new mechanisms and arrangements amount to a ''functional unbundling'' of the utility energy efficiency ''asset'' and reconstituting these functions in an EEX to create the conditions for a competitive energy efficiency services industry.

The EEX along the lines of Figure 1 might include a full set of operating principles that tie together these functions in the competitive delivery of energy efficiency services. An illustrative set of operating principles for the EEX are shown in Appendix A. The operating principles represent the core ingredients of regulation, legislation, and policy direction needed to create a successful EEX.

APPENDIX A
THE ENERGY EFFICIENCY EXCHANGE: PRINCIPLES FOR OPERATION

I. MISSION STATEMENT: The primary purpose of the Energy Efficiency Exchange (EEX) is to promote the wide-spread use by customers of cost-beneficial energy efficiency measures by empowering customers with quality information regarding energy efficiency choices and creating a competitive energy efficiency services industry.

A. ''Promote'' means to support, in the form of information and/or financial assistance, including the use of funds from the Systems Benefits Charge (SBC).

B. ''Wide-spread use'' means the installation of the energy efficiency measures in a preponderance of applicable instances.

C. ''Cost-beneficial'' means that the benefits, to homeowners and businesses, individually and collectively, from installing the energy efficiency measure are greater

than the costs of a decision to forego the opportunity to install the energy efficiency measure.

D. ''Cost-beneficial'' includes, but is not limited to, the costs and benefits of the energy efficiency measure compared to the costs and benefits of electricity and natural gas supplies purchased from the energy distribution company.

E. ''Energy efficiency measure'' means any material or an energy using appliance or piece of equipment, including demand-side applications of technologies that use a renewable energy source, that will result in reduced energy usage at a comparable level of service when installed on the customer side of the meter.

F. ''Demand-side application of technologies that use a renewable energy source'' means a technology that is installed on a customer premise and reduces the use of electricity or natural gas by the on-site production of thermal energy or electricity for use at that site using the energy available from a renewable resource.

G. ''Empowering customers with quality information regarding energy efficiency choices'' means mechanisms that will enhance the ability of customers to make well-informed choices between purchasing energy and reducing energy use.

H. ''Creating a competitive energy efficiency services industry'' means mechanisms that will establish the conditions for a viable, sustainable, energy efficiency services industry capable of delivering energy efficiency services on a competitive basis without further support from a public agency.

II. OBJECTIVES: The objectives of the EEX include the following:

(1) To reduce market barriers for ratepayers and market entry barriers for the providers of energy efficiency services, with the goal of transforming the market for energy efficiency products and services to the point where the use of ratepayer funds is no longer necessary.

(2) To develop and sustain an industry of providers of energy efficiency measures and services that is capable of delivering this assistance to ratepayers.

(3) To assist ratepayers in making decisions and choices about their energy service by facilitating the selection of cost-beneficial energy efficiency measures.

III. FUNCTIONS AND RESPONSIBILITIES

1. *Policy-setting:* A Governing Board, consisting of one PUC Commissioner and other public officials from other existing public agencies, to set policies and rules for the exchange of information and SBC funds between consumers and energy efficiency service providers, including the scope of activities, the designation of the independent administrator of SBC funds, the administrative responsibilities and implementation mechanisms of all entities associated with the EEX, and changes to the level or structure of the SBC.

a. For transactions involving the use of SBC funds, ''implementation mechanisms'' refer to and include a competitive procurement process and ''policies and rules'' refer to and include: the criteria for the eligibility and selection of energy efficiency service providers and other entities to disburse EEX funds, the criteria for assessing the performance of energy efficiency service providers and other entities selected to disburse EEX funds; and the criteria for the determination of ''cost-beneficial.''

b. For information exchanges, ''implementation mechanisms'' and ''policies and rules'' refer to and include the protection of customer privacy rights and access of energy efficiency service providers to information regarding customer-specific information and information regarding energy efficiency markets.

2. *Customer Protection and Empowerment:* The administration, by staff from the PUC, and implementation of Board policies and Board-designated mechanisms approved by the PUC, that:

a. maximize access by qualified energy service providers to customer billing data, while maintaining basic customer confidentially rights;

b. disseminate information to customers regarding qualified energy efficiency service providers, using, when possible and appropriate, PUC-adopted mechanisms regarding certification mechanisms for energy providers.

c. empower customers with quality information on their bills, including information that identifies the price per unit of energy used, premise-specific information on usage patterns, and service comparisons.

3. *Efficiency Procurement:* The administration, by a Board-selected non-profit, independent administrator, of Board policies and Board-designated mechanisms and SBC funds for:

a. the management of a list of certified energy efficiency service providers who are eligible to compete for EEX funds;

b. the competitive procurement of energy efficiency services in the form of customer-specific information services and financial assistance;

c. other market transformation activities that involve non-customer specific activities;

d. the delivery to customers of qualified energy efficiency services by qualified energy service providers to all California customers located in the geographic service territory of a utility that collects energy efficiency SBC funds.

4. ***Strategic Assessment:*** The preparation of:

a. recommendations to the Governing Board on the policies and implementation mechanisms governing Customer Protection and Empowerment (CPE) function and the Efficiency Procurement(EP) function;

b. information for the Board, the administrators of the CPE and EP functions and energy efficiency service providers regarding: energy efficiency opportunities that exist in the market; market barriers to the wide-spread acceptance of energy efficiency measures and services; market entry barriers and areas of potential or actual market abuse within the energy efficiency services industry.

c. research reports, prepared under contract between state agencies and non-profit, on new and emerging energy efficiency technologies and demand-side applications of renewable resources.

ENDNOTES

1. The effective date of the surcharge in California was later changed to January 1, 1998.

2. The restructuring decision applies only to the investor-owned utilities under the jurisdiction of the CPUC.

3. The Energy Efficiency Working Group established following the California PUC restructuring decision (December, 1995) is expected to produce a report in late summer, 1996, with possible hearings in the fall of 1996. One of the key ''assignments'' for this group is to describe and make recommendations on the issues of how the Independent Administrator would function.

4. The EEX is a current (spring, 1996) version of an ''entity'' that has an evolutionary history in restructuring deliberations in California that began in 1994. In the winter of 1994/95, some participants in a CPUC-sponsored workshop process described, in very general conceptual terms, the option of an energy efficiency ''Consortium.'' In its October 2, 1995 Comments on Memorandum of Understanding in the CPUC restructuring proceeding, the CPUC's Division of Ratepayer Advocates recommended that energy efficiency programs funds be administered by a non-profit entity that uses a competitive procurement process for the allocation of surcharge funds, operating in an institutional environment that provides access to customer information by energy efficiency market entrants and market assessment data to market entrants. In the early months of 1996, the independent administrator concept was further developed in informal discussions the author had with Sy Goldstone, Mike Messenger, and David Morse. The EEX described in this paper is similar to an option under discussion in the CPUC-sponsored Energy Efficiency Working Group, and described in Schultz, 1996.

5. ''Advanced metering systems'' refers to not only the meter itself, but the communications software that can process recorded data on usage into a form that improves customer awareness of, and control over, the consumption patterns of major appliances and equipment.

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