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# Who Should Administer Energy-Efficiency Programs?

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## Abstract

The restructuring of the electric utility industry in the US created a crisis in the administration of ratepayer-funded energy-efficiency programs. Before restructuring, nearly all energy-efficiency programs in the US were administered by utilities and funded from utility rates. Restructuring called these arrangements into question in two ways. First, the separation of generation from transmission and distribution undermined a key rationale for utility administration. This was the Integrated Resource Planning approach in which the vertically integrated utility was given incentives to provide energy services at least cost. Second, questions were raised as to whether funding through utility rates could be sustained in a competitive environment and most states that restructured their electricity industry adopted a system benefits charge.

The crisis in administration of energy-efficiency programs produced a variety of responses in the eight years since restructuring in the US began in earnest. These responses have included new rationales for energy-efficiency programs, new mechanisms for funding programs, and new mechanisms for program administration and governance. This paper focuses on issues related to program administration. It describes the administrative functions and some of the options for accomplishing them. Then it discusses criteria for choosing among the options. Examples are given that highlight some of the states that have made successful transitions to new governance and/or administration structures. Attention is also given to California where large-scale energy-efficiency programs have continued to operate, despite the fact that many of the key governance/administration issues remain unresolved. The conclusion attempts to summarise lessons learned.

## Glossary

BPA            Bonneville Power Administration  
CPUC         California Public Utilities Commission

DPUC	Connecticut Department of Utility Control
ECMB	Energy Conservation Management Board
EPACT	Energy Policy and Conservation Act
ESCO	Energy Services Company
NYPSC	New York Public Service Commission
NYSERDA	New York State Energy Research and Development Authority
PSB	Vermont Public Service Board

## Introduction

Proponents of energy efficiency received the Energy Policy Act (EPACT), passed by the US Congress in 1992 (P. L. 102-486), with much satisfaction because of provisions in the Act that encouraged Integrated Resource Planning.<sup>1</sup> Integrated Resource Planning, also known as Least-Cost planning, required state regulatory commissions to consider meeting electricity system resource needs through a process that considered and assessed benefits and costs to society, the utility, and customers of a broad range of resource options including new generation, transmission capacity, and demand-side alternatives. In the Integrated Resource Planning context, energy-efficiency programs were seen as a mechanism for acquiring resources to meet the demand for energy services and avoiding some of the need to procure generation resources. Such programs are commonly referred to as “resource acquisition” programs.

But EPACT also contained provisions that enabled restructuring of the electricity industry in the US and significantly diminished the importance of Integrated Resource Planning in the regulatory agenda.<sup>2</sup> In the US, expenditures for utility energy-efficiency programs peaked at \$1.7 billion in 1993-94. But expenditures began a steep decline in many states after the California Public Utilities Commission (CPUC) announced in April 1994 that it intended to restructure California’s electricity industry.<sup>3</sup>

Restructuring in the US was premised in part on the belief that formal resource planning processes would not be necessary in a restructured industry because market outcomes would be better than the outcomes from plans developed by utilities and regulators. Generation, transmission, and distribution were to be unbundled and no firm or agency was to be responsible for assuring supply since interactions among buyers and sellers in a competitive wholesale electricity market would provide the best balance of supply and demand. In those states with retail competition, distribution utilities typically no longer had the “obligation to serve” for all customers, which meant that there was no place in the restructured electricity industry for Integrated Resource Planning and the attendant acquisition of energy efficiency as a resource.

As states restructured during the late 1990s, state policymakers re-assessed the roles and responsibilities of energy-efficiency program administrators and policy objectives of energy-efficiency programs. Of course,

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<sup>1</sup> Provisions in Title 1, Subtitle B of EPACT required utilities to employ Integrated Resource Planning. The Act defined Integrated Resource Planning as “. . . a planning and selection process for new energy resources that evaluates the full range of alternatives, including new generating capacity, power purchases, energy conservation and efficiency, cogeneration and district heating and cooling applications, and renewable energy resources, in order to provide adequate and reliable electric service . . . at the lowest system cost.” Subtitle B also required utility rates to be structured “. . . such that the utility’s investment in and expenditures for energy conservation, energy efficiency resources, and other demand side management measures are as least as profitable, giving appropriate consideration to income lost from reduced sales due to investments in and expenditures for conservation and efficiency, as its investments in and expenditures for the construction of new generation, transmission, and distribution equipment.”

<sup>2</sup> Provisions in Title 7 of EPACT were intended to increase competition in the electric generating sector by creating new entities, called “exempt wholesale generators” (EWGs), that could generate and sell electricity at wholesale without being regulated as utilities under the Public Utilities Holding Company Act of 1935.

This title also provided EWGs with a way to assure transmission of their wholesale power to its purchaser.

<sup>3</sup> Energy efficiency spending in the US reached a low point of \$918 million in 1997, a drop of almost 50% compared to 1993 spending. Spending has since increased, rebounding to \$1.1 billion in 2000 (York and Kushler 2002).

in those states that restructured, the underlying reasons for public support of energy efficiency did not disappear. Restructuring did not eliminate externalities and other market failures. Thus, a new program rationale, market transformation, emerged in many states. State policymakers articulated this new objective of transforming energy service markets in various ways: “the mission of market transformation is to ultimately privatize the provision of cost-effective energy efficiency services” (California); “[the goal is] facilitating the transformation of markets so that they effectively respond to customers’ needs and public interests in increased energy efficiency” (Wisconsin); “market transformation efforts are designed to create long-term changes that reap continuous energy efficiency savings at low cost” (Massachusetts); “[energy-efficiency program]funds should be targeted towards programs that emphasize permanently transforming the market for energy efficient products and services or reducing market barriers, rather than achieving immediate or customer-specific savings” (New York) (quotations from material in Eto et al. 1998). As can be seen from the above statements, market transformation encompasses several themes. It is a broad umbrella under which many activities may be undertaken. These have included encouraging retailers, distributors, contractors, and builders to change their business models to promote energy efficiency. Other market transformation activities have involved targeting energy efficiency activities at key consumer and business decision points such as the replacement of existing appliances or equipment and the remodelling of buildings.

Restructuring also called into question the mechanism for funding energy-efficiency programs. Before restructuring, when the utilities were vertically integrated monopolies, regulators simply ordered the utilities to include program costs in the utilities’ rates. After restructuring there was concern that including program costs in rates might place the incumbent utilities at a competitive disadvantage—customers might avoid the charge by switching to a new competing supplier. This problem was addressed by creating “non-bypassable” charges. In the ~20 states that restructured most energy-efficiency programs are now funded by ratepayers through a separate “public or system benefit” line item on their bill from the (still) monopoly distribution utility.

The result of these changes in program rationale and funding mechanism is that the US is now experimenting with a variety of administrative and governance arrangements. Overall funding for ratepayer-funded energy-efficiency programs is now at ~1.0-1.2 billion per year (York and Kushler 2002).

While this experimentation is continuing, the disastrous collapse of the electricity market in California in the winter of 2000-2001 (Blumstein et al. 2002) has greatly altered the regulatory landscape in California and other states. When the California electricity market collapsed, leading to system emergencies and power outages, energy-efficiency programs in California shifted emphasis and funding towards programs and activities that produced quick, near-term electricity and summer peak demand savings with some success (Goldman et al. 2002). With the demise of retail competition, California utilities are again being asked to take responsibility for assuring the adequacy of supply, which includes assessment and procurement of generation and demand-side resource options. In states such as New York and Connecticut where state regulators and ISOs are still pursuing policies that facilitate wholesale and retail competition, the new energy-efficiency program administrators have adapted their programs during this transition period to meet state and regional needs (e.g., reduce peak demand in tight supply markets to dampen wholesale price volatility, target energy-efficiency and load management efforts to constrained local load pockets such as in Southwest Connecticut or downstate New York). In the Pacific Northwest with its energy-constrained, hydro-based system, policy-makers have created a regional energy efficiency administrator that embraces a longer-term market transformation perspective as well as “resource acquisition” energy efficiency programs that are administered by a non-profit corporation in Oregon and utilities in Washington.

In the paper we examine some of the questions that are important for the administration of energy efficiency programs in the new regulatory environment. What are the key factors to consider in choosing among different types of entities to administer, design and implement programs? What should and can policymakers do to ensure that the strategies and activities of ratepayer-funded energy efficiency programs contribute to the long-term development of an energy-efficiency services infrastructure?

## Administrative Options

Prior to restructuring in the US, the administration, design, and delivery of ratepayer-funded energy efficiency program activities was largely the responsibility of utilities, operating within the context of an Integrated Resource Planning process that was overseen and governed by state regulators. Most states that restructured their electricity sector re-evaluated the administration and governance of energy-efficiency programs, trying to find the structures that were best suited for the new policy environment. Alternative structures have evolved in which program administration and governance has been taken over by non-utility entities, such as existing state governmental agencies, non-profit corporations with boards of directors, or private sector (for-profit) firms. In assessing the relative merits of these alternative administrative structures, policy-makers and regulators must evaluate the trade-offs involved with working with single-purpose vs. multi-purpose organizations. The core mission of utilities typically involves the reliable, efficient delivery of electric power to end users (and may include power generation). Utilities often view energy efficiency programs as part of their customer services activities and regulators recognize that utilities often have financial disincentives to promote customer load reductions, given how the source of their revenues and profits. As such, utilities are multi-purpose organisations. Policymakers seek to balance the benefits that derive from their trusted position with customers and market entities, their economies of scale and scope, their experience against their perceived conflicts of interest in administering energy efficiency programs. Similarly, as parts of state governments that have many responsibilities, state agencies are also, in effect, multi-purpose organizations. When considering state agencies as candidates to administer a public-purpose energy-efficiency program, policymakers seek to balance the potential benefits of an administrator without perceived conflicts of interest against the potential problems of state government administration. Examples of potential problems with state administration are difficulties agencies may have in focusing on a new mission, constraints imposed by staffing limitations or bureaucratic procurement requirements, challenges of providing effective incentives for a state agencies, and the potential for sub-optimal allocation of funds or mix of programs due to political pressures. Finally, non-profit corporations with a Board of Governors are typically single-purpose organizations whose mission is delivery of energy efficiency programs. Policymakers seek to balance this alignment of administrator objectives/mission with public policy against the challenges of creating an acceptable governance mechanism (e.g., an independent Board of Directors) and establishing a well-respected, trusted administrator with a significantly expanded scope of activities for existing staff or creation of a new organization.

The delivery of energy efficiency programs involves a diverse set of responsibilities that can be grouped according to several core administrative functions (Table 1). It is important to note that distinctions between the administrative functions and responsibilities are not absolute; in many cases, multiple entities may be involved, with some division of assigned roles (primary/secondary, shared). Furthermore, there is some degree of overlap between the functions and responsibilities; e.g., program design, which falls within the domain of Program Development, Planning and Budgeting, as well as Program Administration and Management.

**Table 1: Typology of Administrative Functions**

Administrative Function	Specific Responsibilities
General Administration and Coordination	<ul style="list-style-type: none"> <li>• Manage overall budget for portfolio of programs</li> <li>• Manage contracts with all primary contractors – e.g., program administrators</li> <li>• Maintain centralized information system for reports regulators, legislators, advisory groups, etc.</li> </ul>
Program Development, Planning, and Budgeting	<ul style="list-style-type: none"> <li>• Prepare initial technical and/or market reports necessary for program strategies and initial program designs</li> <li>• Facilitate development of public planning process</li> <li>• Prepare general program descriptions and budgets for regulatory approval</li> </ul>
Program Administration and Management	<ul style="list-style-type: none"> <li>• Prepare detailed program designs and propose changes based on experience-to-date</li> <li>• Hiring and management of sub-contractors for program implementation</li> <li>• Quality assurance standards and tracking</li> </ul>

	<ul style="list-style-type: none"> <li>• Review and approval of invoices</li> </ul>
Program Delivery and Implementation	<ul style="list-style-type: none"> <li>• Promote and market programs</li> <li>• Develop and implement program services (e.g., energy audits, financial incentives, contractor certification, information and education, etc.)</li> <li>• Develop energy efficiency projects at specific sites</li> <li>• Develop measurement and verification (M&amp;V) procedures and/or conduct M&amp;V to determine performance-based administration fees or shareholder incentives</li> </ul>
Program Assessment and Evaluation	<ul style="list-style-type: none"> <li>• Assess program impacts and/or cost-effectiveness</li> <li>• Evaluate effectiveness of program processes and administration</li> </ul>

Typically, some single entity – the “Energy-Efficiency Administrator” – maintains primary responsibility and accountability for the proper use of the public or ratepayer funds supporting the programs. Depending on the type of organization designated for this role (e.g., distribution utility, state agency, non-profit organization), this accountability may be based on a contractual relationship, through regulatory oversight, or through management by a board of directors composed of key stakeholders.

In regions where market transformation is a priority of policymakers, or when minimizing administrative costs is an important concern, a significant portion of the administrative responsibilities may be outsourced to third parties, as a means of building private sector infrastructure or reducing administrative overhead. Third parties can participate at any number of levels within the program delivery chain: at the program portfolio level, the individual program level, the project level, or for specific implementation functions (e.g., program design, energy auditing, measurement and verification services, program evaluation, etc.). These arrangements may be established through competitive solicitation, such as demand-side management bidding programs, where a request for proposals is issued for specific energy efficiency projects. Or alternatively, they may be based on a partnership arrangement, such as with industry or vendor trade associations (e.g., for information campaigns), academic institution, etc. Ultimately, both the administrative structure, itself, and the nature of the relationships between the institutions involved will be dictated by a host of factors.

## What Criteria need to be considered in choosing an administrator?

In this section we examine several criteria that need to be considered in choosing an energy-efficiency program administrator, which include compatibility with broader public policy goals, effectiveness of incentive mechanisms, ability to realize economies of scale and scope, and contribution to the development of the energy efficiency infrastructure.

Compatibility with broader public policy goals. When energy efficiency programs were conducted in the context of Integrated Resource Planning, utilities were the obvious choice for program administration. The Integrated Resource Planning paradigm was one in which the utility became a provider of energy services; energy efficiency was an integral part of the business. However, with electricity restructuring, many states have adopted policies that encourage or compel utilities to de-integrate, divest generation assets, encourage formation and entry by competitive retail energy suppliers, create new institutions to administer the transmission grid, and thus left utilities as distribution companies under state regulation. In this market structure, energy services were to be provided primarily by the competitive providers, including those affiliated with utilities. Thus, policymakers increasingly considered such factors as ability to foster provision of energy efficiency services by the competitive market, and capability to support market transformation goals as criteria in selecting energy efficiency program administrators. Specifically, if program objectives are focused on achieving market transformation objectives, then it is particularly important for the administrator to have comprehensive knowledge of the retail energy and energy efficiency markets, have the ability to quickly ramp up and down program initiatives, and to have flexible contracting and procurement processes.

Effectiveness of incentive mechanisms. Incentives have been an issue from the inception of utility-administered energy-efficiency programs. After years of command and control regulation, many policymakers in the U.S. concluded that incentive mechanisms were needed both to reward “superior”

performance in delivering energy efficiency resources and to address disincentives that were inherent in rate-of-return regulation. For most utilities under rate-of-return regulation, profits in the short run increased with increasing sales. Thus, utilities actually had a disincentive for effective program administration. In those states that implemented Integrated Resource Planning, regulators dealt with this issue by creating rate designs that made the utility profits independent of sales and paid incentives to shareholders for effective energy-efficiency programs. Since, in the Integrated Resource Planning context, the purpose of the energy-efficiency programs was resource acquisition, the incentive payments were based on measurements of the energy savings directly attributable to the programs. This approach was not without problems as we discuss below.

When the agenda shifted from resource acquisition to market transformation the problem of incentives became, in some ways, more complicated. First, the effectiveness of market transformation programs and activities are more difficult to measure than the effectiveness of resource acquisition programs. Second, traditional incentive mechanisms used to motivate utilities (e.g. “shared savings”, “bonus” based on net societal benefits) were less applicable to the new entities under consideration for energy efficiency program administration, such as non-profit organizations, state agencies, or private firms.

Ability to realize economies of scale and scope. Prior to restructuring, utilities seemed the obvious choices for administrators of energy-efficiency programs because they were responsible for resource acquisition of all types and had well established relationships with the customers from whom efficiency resources were to be acquired. When resource acquisition is the mission there are no obvious economies of scale beyond the need to be large enough to maintain an effective professional staff.

The situation is different when market transformation is the mission. Arguably activities like electricity transmission and distribution are a distraction, not a complement. Markets often extend beyond the boundaries of a single utility’s service territory. Often it seems more appropriate to conduct market transformation programs on a statewide, multi-state regional, national, or even international basis. Quite substantial resources may be required to have a significant market impact; efforts that are undertaken on too small a scale may dissipate resources without any impact.

Contribute to the development of the energy efficiency infrastructure. In the initial euphoria supporting restructuring and the potential effectiveness of markets in the electricity sector, some policy makers concluded that ratepayer-funded energy-efficiency programs were transient phenomena. In this view, government intervention would only be needed for a short transition period, after which the competitive retail market would provide robust energy efficiency service offerings to all customer classes and market segments. This view was overly optimistic. The externalities and other market failures that are the underlying justification for energy efficiency programs remain, particularly for smaller end users, and are going to be with us for the foreseeable future. A steady improvement in energy efficiency (that is, a steady reduction in the energy intensity of the economy) is at least part of the path to a sustainable future. To accomplish this end we need to build an energy-efficiency infrastructure that is capable of sustaining a steady reduction in energy intensity over the long term. This requires, at a minimum, greater stability and predictability in public support for energy efficiency. During the era of Integrated Resource Planning, funding levels for energy efficiency varied significantly over time depending on the utility’s overall load/resource balance, forecast of avoided costs, and regulator’s concerns about rate impacts. With passage of legislation or regulations that typically authorize specified levels of public benefit funding, the largest uncertainties are the duration of funding (e.g., sunset provisions in legislation), mix and allocation of program funds, and limits on the functions/activities to be performed by the program administrator vs. third parties.

The issue of how best to build and sustain energy efficiency infrastructure is directly related to the roles and responsibilities provided by energy efficiency program administrators. Should the energy efficiency program administrator be an institutional home for “human capital” (that is, people with the expertise needed to implement energy-efficiency programs)? Or, should the energy-efficiency program administrator be a “funding agent” whose primary role is “outsourcing” programs in order to foster the development of private sector firms, non-profits, and other institutions that support energy efficiency. Institution building is a significant challenge, either in terms of retaining the capability of existing institutions or creating new

institutions that are sustainable over the long term. In the US, policymakers have considered such issues as the potential value and/or loss of existing energy efficiency expertise and resources of utilities, the linkages between incumbent energy-efficiency program administrators and the broader network of energy efficiency service providers, and the ability of different types of energy-efficiency program administrators to attract highly qualified and motivated administrative and technical personnel.

## **Energy Efficiency Program Administration and Experience in Five U.S. States/Regions**

As states in the US have restructured their electricity sector, a range of different approaches has been adopted for the administration and governance of energy efficiency programs. Historically, the incumbent utilities served as administrator of these programs in most states, within the context of an integrated resource plan. Some states have opted to continue using the utilities as primary administrators, while other states shifted some or all of that responsibility to state agencies or nonprofit organizations. Five states/regions, discussed below, provide specific examples of the types of administrative approaches that have been adopted and the issues that these approaches have sought to address (Table 2).

### **Pacific Northwest**

Energy efficiency programs throughout the Pacific Northwest region (Oregon, Washington, Montana, and Idaho) are administered by a non-profit organization, the Northwest Energy Efficiency Alliance (“the Alliance”). Programs offered by the Alliance are all strongly geared towards market transformation (for example, efforts aimed at coordination among market actors, marketing support for new energy-efficient products, and training and information services). These programs are augmented by a variety of more traditional resource acquisition programs offered by individual utilities in Washington, Idaho, Montana, a non-profit corporation administering programs in Oregon, and the Bonneville Power Administration (BPA). The Alliance is funded by the investor-owned and public utilities and BPA, and is governed by a board of directors, which includes representatives of public and investor-owned utilities, BPA, state governments, and consumer groups.

The Alliance was born out of a long-term resource plan by the Northwest Power Planning Council, which called for a coordinated and sustained effort to build the market for energy efficiency services and products in the region, as a strategy for meeting projected growth in electricity demand. Historically, energy efficiency “resource acquisition” programs had been funded and administered by BPA, a number of large investor-owned utilities, and hundreds of small public utilities. The region’s policymakers decided that this administrative structure was sub-optimal to support their new market transformation objectives and also resulted in relatively high administrative costs. Thus, a fundamental rationale for creating a regional non-profit corporation to administer market transformation programs was to capture the economies of scale necessary for reducing administrative costs and providing a consistent signal to market actors (for example, builders, contractors, retailers) and customers in a multi-state region.

While the scale of the Alliance is multi-state, the scope is narrow. The Alliance focuses on market assessment, program design, and project development, but does only a very limited amount of program implementation. The defining feature of the Alliance, as an organization that manages and oversees energy-efficiency programs aimed at market transformation, is the degree to which its activities are guided consciously and explicitly by the goal of institutional and capability building of other organizations in the region.

The Alliance has a small, highly trained and experienced professional staff that is strongly motivated by civic concerns. The Alliance does not have any explicit financial incentives for good organisational performance. But, as a single-purpose organisation dependent the goodwill of numerous stakeholders, good performance is probably necessary for long-term survival.

### **California**

Energy efficiency programs in California are currently administered by the state’s four large investor-owned utilities. Energy efficiency public benefits programs are funded through a non-bypassable surcharge



on customers' electric bill, established through the state's restructuring legislation passed in 1996, which provides approximately \$275 million annually for electric and natural gas energy efficiency programs. Oversight of program design and budgeting is conducted through annual regulatory proceedings of the California Public Utilities Commission (CPUC), where members of the public and other stakeholder groups can provide input and recommendations to the CPUC on the utility's proposed program plan, budget, and incentive mechanism for rewarding their performance.

Since the onset of restructuring, California policymakers have devoted significant time and attention to program administration, as it has been a very contentious issue. The restructuring legislation only provided funding for four years. In 1997 the primary policy objective of the CPUC was to cultivate a self-sustaining market for energy efficiency services so that public funding would not be needed after 2002. Compatibility with this policy goal required that any potential conflicts of interest related to the unregulated utility-affiliated companies be addressed. There was therefore a desire to move toward "independent" administration of the public benefits funded energy efficiency programs. The CPUC created an advisory board, the California Board for Energy Efficiency, whose mission was to facilitate the selection of an "independent" administrator and make recommendations regarding on utility program designs and budgets to achieve the CPUC's market transformation objectives (CPUC, 1998). The objective of restructuring program administration conflicted with the objective of ending program funding in only a few years. It was a tumultuous period for the utility program administrators; day-to-day program operations undoubtedly suffered as a result (Gilligan 2003).

In the end, legal problems associated with a lack of enabling legislation caused the CPUC to withdraw its competitive solicitation to select independent program administrators in 2000 and utilities are continuing to administer the state's energy efficiency programs. However, the CPUC continues to promote "outsourcing" type strategies that limit the functions and scope of activities performed by utility administrators. For example, in 2002, with the crisis apparently over, the CPUC took a significant step toward redefining the administration of efficiency programs in California. The CPUC defined a set of statewide programs, which were to be managed and implemented largely by the utilities, and established policy goals, budgets, and a competitive solicitation process for "local" programs, which were to be administered and implemented primarily by third parties. Historically, the vast majority of funds have been allocated to the statewide programs and thus, to a large extent, under utility control. However, in 2002, the CPUC opted to substantially shift the funding toward local programs, allocating approximately \$125 million of the public benefits funding to local programs, in an effort to increase the flexibility of the programs and better serve hard-to-reach customer segments (CPUC, 2002a). The CPUC's continuing focus on energy-efficiency program administration serves to illustrate the contentiousness of the issue in California, and the disputes clearly have had a negative impact on energy efficiency markets and service providers.

California policymakers and energy-efficiency program administrators have also adjusted the mix of programs, their design, and budget allocations as market conditions and relative emphasis among policy goals changed. For example, during the electricity crisis, the CPUC responded by shifting the focus of the 2001 energy efficiency programs toward short-term energy savings and peak demand reductions. As a result of this move, the programs were successful in achieving peak demand reductions of 280 MW in 2001, compared to approximately 190 MW during each of the two prior years (CPUC, 2001).

In California, the move toward "standardized" statewide programs, even though administered by the four utilities, was an attempt to realize some economies of scope and scale. Unlike other states, the California utilities are of sufficient geographic size that they have the ability to manage statewide "market transformation" type programs targeted at certain markets, such as new construction and residential appliances, although there is some loss in efficiency because of four administrators. However, over time the CPUC has increasingly become disenchanted with various incentive mechanisms to motivate utility performance. Because the CPUC believed that incentive payments were too high, it has steadily lowered the fraction of program budgets available for incentives since the mid-1990s. Between 1998-2000, the CPUC adopted a comprehensive set of 50-75 program and market indicator milestones whose accomplishment was linked to performance incentives. In 2001, the CPUC revised its approach to performance incentives and adopted fewer milestones, which are linked to energy and peak demand savings and net benefits. In 2002, the CPUC changed its approach again and removed the "carrot" of performance

incentives, in favour of the “stick” which involved withholding a portion of program cost recovery pending satisfactory achievement of program goals such as energy and demand savings and program participation (see Table 2). Thus, the CPUC’s latest approach relies more on “benchmark competition” and the threat of “local” energy-efficiency programs administered by non-utility parties, rather than providing “carrots” of large financial incentives for superior performance to motivate utility energy-efficiency program administrators. Although California’s state legislature made a long-term commitment to public benefits funded energy efficiency programs by extending the law that provides funding through 2112, the turmoil surrounding program administration, as illustrated in the ill-fated attempts to select an “independent” administrator and the controversies surrounding performance incentives and “outsourcing,” have detracted from the creation of an energy efficiency services infrastructure.

## **New York**

The primary administrator for energy efficiency programs in New York is the New York State Energy Research and Development Authority (NYSERDA). Programs are funded through a system benefits charge (SBC), which was authorized by the state’s restructuring legislation passed in 1996, initially for a three-year period. In 2000 annual funding for the programs was increased substantially, from \$58 million to \$139 million. NYSEDA’s administration of the programs is based on a contract with the New York Public Service Commission (NYPSC), which receives guidance from an independent advisory group in its review of NYSEDA’s program management and implementation.

The decision to designate NYSEDA as the administrator of the state’s energy efficiency programs was based on a certain set of policy objectives as well as the previous experiences with utility-administered DSM programs in New York. In New York, the utilities divested their generation and focused on providing distribution service. Furthermore, the performance of the seven investor-owned utilities’ previous DSM programs had been uneven and the administrative cost of the programs and the incentives required to motivate utility performance were judged to be high. Moreover, several utilities indicated a lack of interest in continuing to administer energy efficiency programs. As a result, regulators concluded that, given limited funds, it would be better off working with NYSEDA, an existing state energy R&D agency with some experience administering public purpose programs. The NYPSC capped NYSEDA’s administration expenses at 5% and adopted policies with a strong focus on creating companies that would offer energy efficiency as part of a full array of commodity and value-added services. Hence, NYSEDA has devoted significant portions of its budget to programs targeted at stimulating an Energy Services Company (ESCO) industry. As a result, New York has about 20-25 active ESCOs working in its Standard Performance Contract program and institutional/schools markets (Gilligan 2003). NYSEDA has tended to outsource a large amount of implementation functions, while retaining responsibility for program management and design. Thus, NYSEDA appears to have had some success in creating an energy efficiency services infrastructure that will serve the New York market over the longer term, which is consistent with the historic “economic development” philosophy of the agency. Finally, by retaining basic program management within the state government, administrators have also been able to respond to the threat of short-term generation shortfalls by increasing the emphasis on peak demand savings and targeting programs to constrained areas with transmission and supply bottlenecks (e.g., New York City and Long Island.)

## **Vermont**

Vermont chose to hold off restructuring its retail electricity industry, and decided to first transition its energy efficiency programs to a new administrator, as a preemptive measure to deal with potential price spikes and volatility. The approach taken by Vermont’s legislature was to consolidate the administration of all energy efficiency programs under a single, non-profit “energy efficiency utility” whose sole purpose is to deliver energy efficiency programs. This organisation, known as Efficiency Vermont, is responsible for the majority of administrative functions, including program management, design, and implementation. Funding is generated through a system benefits charge on customers’ electric bills, and is transferred to Efficiency Vermont from the utilities, via a contracted fiscal agent. The specific entity that administers the programs was selected through a competitive solicitation, and operates under a three-year contract with the Vermont Public Service Board (PSB).

Although Efficiency Vermont is a non-profit corporation, at the end of the contract period it can earn an incentive payment of up to 2.9% of the value of its contract with the PSB. This payment is based on several measures of performance including energy and peak demand savings, total resource benefit, and several market-specific indicators, which are tightly linked to the broader public policy goals articulated by the PSB.

This unique administrative structure was adopted as a result of a number of factors particular to the state. Vermont is a small, rural state with approximately 600,000 people. Prior to the creation of Efficiency Vermont, energy efficiency programs were administered separately by 22 small utilities. Performance among these utilities was quite uneven, and the regulatory oversight entailed in reviewing programs for many small utilities proved to be quite costly and burdensome for the small staff of the Public Service Board. The Public Service Board sought to improve the quality and consistency of programs by mandating a single set of programs to be offered statewide, while also taking advantage of the increased scale of operation to create a more cost-effective delivery mechanism. Furthermore, because of its small population, it was thought unlikely that Vermont would be able to attract a significant number of large ESCOs, and thus the option of using a single organisation to administer all energy efficiency programs in the state was deemed an attractive approach. Thus, Vermont has made a conscious decision to build a long-term energy efficiency services infrastructure through Efficiency Vermont, which provides a “one-stop” shopping model of energy efficiency services. This model makes most sense in small states or geographic regions or rural states where large, national private ESCOs or retailers are unlikely to enter the market.

## **Connecticut**

The basic administrative structure in Connecticut is similar to that originally adopted in California during the 1998-2000 period. The energy efficiency programs are administered by the state’s two large investor-owned utilities, subject to the regulatory oversight of the Connecticut Department of Public Utility Control (DPUC). An independent advisory board, the Energy Conservation Management Board (ECMB), which holds regularly scheduled public meetings, was created to provide a forum for public input and to make recommendations to the DPUC on energy efficiency policies and program design, mix, and budgets. Funding for the programs is provided through a system benefits charge, which was authorised as part of the state’s restructuring legislation.

The basic administrative and governance structure in Connecticut was formulated during the restructuring process in an attempt to address a number of issues identified with the existing approach. The two investor-owned utilities had previously been responsible for providing energy efficiency programs, but the programs were not uniform, and because of the utilities’ financial disincentives to pursuing end-use energy efficiency, a large amount of resources were required to induce any interest on their part. The DPUC sought to create a set of statewide programs in order to reduce customer transaction and administrative costs, and to establish greater market presence and continuity with vendors and manufacturers. The ECMB was thus created to facilitate these efforts. This administrative structure has thus far proved successful, in terms of generating a set of consistent statewide programs and has also provided sufficient flexibility to respond to short-term conditions, by targeting additional funds and efforts towards the southwestern Connecticut, where acute transmission constraints were identified as a significant reliability threat.

## **Conclusion**

In the US, electricity restructuring has resulted in significant changes in the acquisition of energy efficiency resources as an outgrowth of an Integrated Resource Planning process, in establishing a role for transforming markets as a new policy objective, and in stimulating new models for administration and governance of these activities. Prior to restructuring, energy efficiency program budgets and savings goals were developed as part of Integrated Resource Plans, and thus budgets could change fairly significantly when plans were updated depending on the overall supply/demand balance, energy-efficiency program cost-effectiveness, and rate impacts. After restructuring, in those states that adopted system benefits charges, the energy efficiency planning process has changed somewhat as regulators/administrators are given some pre-specified amount of public benefits funds which is typically known over a multi-year period and legislatively or administratively authorised. The issues faced by regulators/administrators focus

on how to allocate those funds among customer market segments, types of programs/activities, and the balance between near-term acquisition of electricity and peak demand savings vs. longer-term activities designed to reduce market barriers and create a sustainable energy efficiency services markets/industry.

No single administrative structure for energy efficiency programs has yet emerged in the US that is clearly superior to all of the other alternatives. And, in our view, this is not likely to happen soon for several reasons. First, policy environments differ significantly among the states. Second, the structure and regulation of the electric utility industry differs among the regions of the US. Some states such as Vermont have small utilities while others such as California have very large utilities. Vertically integrated utilities continue to operate in many states, including states that allow retail competition. These different arrangements affect the perceived and actual financial disincentives of utilities to promote energy efficiency. Third, market transformation and resource acquisition, which once were seen as alternative strategies, are increasingly coming to be seen as complementary strategies. Energy-efficiency programs going forward are likely to include elements of both strategies. But, the administrative arrangements that are best suited to support market transformation are probably different from the arrangements that are best for resource acquisition.

The differences in policy environments are partly due to different experiences with restructuring. By-products of electricity market restructuring, which include increased price volatility in wholesale electricity markets, occasional price shocks and system reliability events, have forced energy efficiency program administrators to react quickly to these “short-term” crises with programs designed to reduce load, summer peak demand, or targeted at constrained areas. In some cases, they have had to divert attention from their longer-term market transformation goals and re-allocate program budgets and resources to address local emergencies (New York, Connecticut). In places where the crisis has been quite severe (California), there is a more fundamental re-thinking of the role of planning. In California, with the demise of retail competition, the CPUC has directed the utilities to submit what is essentially an Integrated Resource Plan as part of their proposals for procuring long-term resources.

When resource acquisition is the objective, utilities—provided that they are large enough—remain natural candidates for program administrators. Utilities have easy access to customers and are often trusted intermediaries between customers and suppliers of energy efficiency products and services. The effectiveness of resource acquisition programs is relatively easy to measure, so incentives can be tied to performance. The situation is different when market transformation is the objective. Access to customers is not as important since most programs are not “one-customer-at-a-time.” Often the targets are not customers but are suppliers or intermediaries like lenders or educators. Program success is more difficult to quantify and incentives, if any, must be tied to subjective measures. If the view that resource acquisition and market transformation are complements gains ascendancy, we may see the emergence of more arrangements like that in the Pacific Northwest where a single-purpose regional agency administers market transformation programs and utilities and state agencies administer resource acquisition programs.

The debate over administration of energy efficiency programs has often centred on the incentives, motivation, and capabilities of utilities vs. other types of entities. Issues related to developing an energy efficiency services infrastructure have often been framed in terms of activities that can/should be performed by the administrator (that is, the utility) vs. private sector entities. Often, missing in this discussion is a more fundamental discussion on the underlying strategy to create a vibrant, long-term energy efficiency services infrastructure. Over time, it will be necessary to pay more attention to this issue if energy efficiency is to achieve its full promise and potential.

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**Table-2: Administrative Structure of Energy Efficiency Programs in Five U.S. States/Regions**

	<b>Pacific Northwest</b> <sup>5,6</sup>	<b>California</b> <sup>1,7,11</sup>	<b>New York</b> <sup>1,3,4</sup>	<b>Vermont</b> <sup>1,2</sup>	<b>Connecticut</b> <sup>1,8,9,10</sup>
Administrator	Northwest Energy Efficiency Alliance	Pacific Gas & Electric, Southern California Edison, Southern California Gas Company, and San Diego Gas and Electric	New York Energy Research and Development Authority (NYSERDA)	Efficiency Vermont	Connecticut Light and Power, United Illuminating
Organization Type	Regional nonprofit	Investor Owned Utilities	State Agency	Energy Efficiency Utility (non-profit)	Investor Owned Utilities
Governance	Board of Directors	Oversight by California Public Utilities Commission	Contract with New York Public Service Commission	Contract with Vermont Public Service Board	Oversight by Connecticut Public Utilities Commission with ECMB advisory board
Funding Source	Ratepayer funding or public benefits funding from BPA and utilities in each state	Public Benefits Fund through surcharge of 1.3 mills/kWh	Public Benefits Fund through surcharge of 0.83 mills/kWh	Public Benefits Fund through surcharge of 2.5 mills/kWh	Public Benefits Fund through surcharge of 3.0 mills/kWh
Duration	Indefinite	Through 2012	Through June 2006	No sunset in legislation; three-year contract with Administrator	Indefinite
Annual Budget (EURO)*	20 million EURO	275 million EURO	83 million EURO	13 million EURO	86 million EURO
Performance Mechanism	None	A portion of cost recovery withheld pending satisfaction of program goals, including energy and peak demand savings as well as various program-specific participation goals	None	Electricity and Peak Demand Savings, Total Resource Benefit, and several market-specific indicators	Primarily based on electricity savings, with several additional program-specific participation goals
Performance Incentive	None	Up to 15% of cost recovery at risk	None	2.9% of contract value; maximum of \$1.28 million cap over contract period	Up to 8% of expenditures
Annual Energy Savings in 2001	403 GWh	1,152 GWh	309 GWh	38 GWh	219 GWh

\* US dollars converted at 1 dollar = 1 Euro

1. (ACEEE, 2003)
2. (Hamilton et al., 2002).
3. (York et al., 2002)
4. (NYSERDA et al., 2002)
5. (NEEA, 2001a)
6. (NEEA, 2001b)
7. (CPUC, 2001)
8. (UJ, 2002)
9. (ECMB, 2002)
10. (DPUC, 2001)
11. (CPUC, 2002b)