INTRODUCTION

This paper examines policy options and approaches for the administration and implementation of ratepayer funded electric utility energy efficiency programs. We have surveyed the administrative approaches used in 14 states, the Bonneville Power Administration and, to a lesser extent, four countries[1], and have tried to identify not only the ways in which administrative approaches differ but to determine why some states have clearly had more success in realizing energy efficiency than others.

The administrative structures used in the states we surveyed fall broadly into four categories:

- Independent, non-government statewide organization
- Fully integrated IOU
- Unaffiliated distribution company
- Government administration at both state and local level

Each state was examined through personal interviews and review of relevant documents, in nine substantive areas:

1) Process and length of time to establish administrative body
2) Details of organizational structure (budget, staff, customer or geographic segmentation)
3) Funding means for administration and for programs
4) Degree of association with a long run resource plan
5) Guidelines for program effectiveness (up-front)
6) Pre-implementation program evaluation guidance
7) Results of program evaluation
8) Significance of financial incentives, revenue decoupling or other performance based incentives
9) The degree of apparent success and sustainability of each administrative approach.

We have organized this paper into two parts. Part One addresses Query 9 above, the degree of apparent success and sustainability of each administrative approach. Part One provides a comparative discussion of each of the four major approaches drawing upon state experience and relative success in achieving the stated goals of each.

Part Two is the individual state survey reports with the information related to Query 1-8 above. It provides details on the administrative organization, program activities and outcomes to date for each jurisdiction.

[1] The four countries surveyed were Australia (New South Wales), Brazil, Norway and the United Kingdom. We have not included these countries in Part One, the comparative discussion (they do appear in Part Two) as neither the scale or scope match the state efforts discussed here. Australia, the UK and Norway are primarily carbon mitigation programs. Brazil explicitly funds demand side efficiency, but on a very small scale (.25% revenues).

PART ONE

1. Comparative Discussion

While examination of the nine described areas of inquiry provides a fairly comprehensive picture of what each state approach was designed to do and how each functions, it quickly became apparent to the authors of this paper that successful deployment of cost effective energy efficiency requires three fundamental cornerstones, regardless of administrative structure:

> *Clarity* of stated purpose at every level (from overarching goals to individual program design and evaluation metrics). Clarity begins with the policy reasons for pursuing energy efficiency found in underlying enabling legislation and PUC orders. The PUC needs to know when to step in forcefully and when to step aside. Once an administrative structure has been designed and put it place, it needs some time to prove its operative abilities.
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> *Consistency* of policy over time.[2] Energy efficiency programs take time to implement and savings are realized over time. Frequent changes in goals, program design or commitment to purpose does great harm to achieving efficiency results. Further, efficiency policy requires ongoing political support and regular supportive public pronouncements from policy makers.
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> *Consensus* of key stakeholders, as to goals and structure, as well as program design, measurement metrics, performance based regulation. At a minimum, key stakeholders include the utilities and the regulators. Ideally, it includes all major interveners, customer classes, environmental and low income stakeholders. The broader the consensus, the more successful programs and energy savings results will be.

1.1. Background

Ratepayer funded energy efficiency programs evolved in the 1980's primarily as utility demand side resource investments. Efficiency investments were required when they lowered costs as compared to utility supply side resources (most often generation, but occasionally transmission and distribution as well). Because efficiency programs were seen as integral pieces of a utility's overall resource portfolio, it was universal regulatory practice to rely upon utility administration of demand side interventions. Utilities designed and implemented energy efficiency programs for their customers, with whom they had an exclusive relationship when it came to providing electricity services. Regulators set policy parameters for efficiency investments by designating

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[2] Consistency of policy does not necessarily mean consistency of administrative structure. Administration can and have been changed in several of the more successful programs. However, it is clear enough that major structural changes can be chaotic, causing delay, loss of infrastructure and weak program results. Only those jurisdictions which maintained the highest levels of clarity, consistency and consensus among key stakeholders while implementing major renovations in administration were able to achieve an ongoing high level of program results without dropping the ball.

how cost effectiveness will be measured, approving budgets, verifying results and in many jurisdictions, by providing regulatory incentives designed to align utility financial motives with ratepayer interest in achieving cost effectives efficiency investment (thus avoiding more expensive supply side alternatives). This was the model for program design and delivery until industry restructuring came along, throwing into question the premise that utilities needed to be or should be vertically integrated or that they should be further involved in energy efficiency markets.

The restructuring debate and the uncertainty it engendered for utilities and for regulators cast a deep chill on demand side investments in many states. Nationally, investment in ratepayer funded energy efficiency, not including load management expenditures, declined precipitously from $1.6 Billion in 1993 to $900 million in 1997. (Kushler 2003). Efficiency funding in some jurisdictions suffered, sometimes as a matter of free market philosophy sometimes through ordinary neglect due to finite regulatory attention. Even in states which ultimately decided to retain the vertically integrated monopoly utility model energy efficiency program activity suffered declines (CO), though in some states, (MN, NJ, NY) program commitment was strengthened following restructuring and, in other states seems to be no worse off (FL) following the restructuring debates. In the last year, it appears that efficiency funding has begun to increase once again although it has not returned to the highest levels of effort (>5% total utility revenues for utilities most aggressively developing the efficiency resource) seen in the early 1990's (Kushler 2002) (Hirst 1994).

States which opted to develop retail competition most often also decided to maintain some ratepayer funding for energy efficiency through the creation of system benefit charges (SBC) (Public Goods Charge in California) although, as noted, the level of financial commitment was with a few exceptions, lower than in the pre-restructuring era and, efficiency program development was no longer economically integrated into a comprehensive resource portfolio as such. In many states the surviving efficiency investment (SBC) was retargeted toward "market transformation" programs designed to cure identified dysfunction within specific efficiency markets rather than to the goal of broadly acquiring all cost effective efficiency as an energy resource.

Several states which adopted the retail competition model began to look for entities other than utilities to administer efficiency programs. Some assigned the duties within state government (ME, IL, OH, WI, and NY) as part of industry restructuring. Other states decided to let the energy efficiency duties remain with the now unaffiliated distribution companies (MA, CT). Oregon created anon-prfofit entity to contract with for efficiency programs. And, one state (VT) uncertain whether or not retail competition would become state policy, decided to contract with e a private entity, as a regulated *energy efficiency utility*, dedicated exclusively to providing state wide energy efficiency services believing it to be a superior model whether or not restructuring occurred.

1.2. Energy Efficiency Goals

States declare a variety of goals for ratepayer funded energy efficiency programs. The two most

common goals are 1) energy resource acquisition and 2) market transformation.[3] These two goals while not mutually inconsistent do tend to result in different kinds of efficiency program designs and different approaches to measurement of results. They also require slightly different types of program administration.

1.2.1 The goal of *energy resource*[4] acquisition was the original goal of most ratepayer funded programs. Using this goal signifies a philosophy that energy efficiency is a resource much like any other electrical energy supply side resource, only it happens to reside in the hands of the customers. It is a unique resource with cost savings benefits for the system as a whole but which can only be obtained by actions which reduce the demand of the customer. Efficiency programs designed to meet an energy resource goal are directed to finding and releasing the cost effective efficiency held by customers while holding the customers' amenity level (amount of light, heat, power drive, etc.) to the same or in some cases to even higher levels than existed before the implementation of the efficiency measure or process.

Considering ratepayer funded efficiency as an immediate energy resource places emphasis on approaches that can achieve the efficiency in a relatively short period of time and in which the savings can be measured with some precision over the life of the efficiency measure. Programs which fund the incremental costs of building a home or commercial building to efficiency standards which greatly exceed existing building codes, or which pay to change out light bulbs or to upgrade heating and air conditioning systems are examples of common energy resource programs. Using efficiency as a resource is often coupled with a secondary goal of equitable distribution of opportunity to participate in programs. Otherwise, the efficiency investment would be more narrowly targeted to only the most cost effective opportunities which may be held in the hands of very few customers, such as process changes for large industrial customers.

1.2.2 The other common broad goal of ratepayer funded efficiency is *market transformation*. This goal is based upon the understanding that a great deal of cost effective efficiency does not occur because of certain well-known barriers in the markets for efficiency goods and services. These barriers which have been well-described include: 1) high customer discount rates, where the customer demands a very short payback for what is essentially a capital resource; 2) split incentives such as that between landlord and tenant where a tenant who pays the electric bill might see savings from an efficiency program but the landlord who would need to make the capital improvement does would not realize any savings; 3) lack of information, including among engineers, architects, customers, the buyers of equipment and services, and distributors of all sorts of electrical equipment; and 4) high upfront costs which prevent customers who understand there are savings to be had over time but who nevertheless don't have the cash to retrofit a household with $12.00 light bulbs or to purchase a $1000 front-loading efficient washing machine.

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[3] As regional wholesale electricity markets continue to develop, new energy efficiency policy goals may include targeted applications designed to improve the capacity and operations of regional electricity systems. Discussion of such additional goals is now occurring in the ISO-NE and NY-ISO.

[4] Energy resource acquisition as discussed here does not include *load management* programs. Some states, particularly those which use the Ratepayer Impact test for measuring cost effectiveness, place policy emphasis on reducing growth of system peaks. Load management programs do not necessarily reduce energy use but rather, move the timing of energy use from peak periods to other periods less costly to serve.

Market transformation programs seek to understand what the barrier is for a specific device, appliance, process or measure and to use funds to permanently alter or remove the barrier so that particular market will function on its own in the future with no further investment of ratepayer funds. An example might be a program designed to encourage distributors of water heaters to have highly efficient models on hand and to promote their sales when customers call (almost always in an emergency mode) for replacement. Another example would be working with the homebuilding community to educate all homebuilders on materials and techniques for building highly efficient homes with the goal of having the industry adopt and use the efficiency techniques as a ordinary commercial practice.

Market transformation programs seek to change behavior over an entire sector. It takes time and the energy savings results rarely occur quickly. In fact, it can be difficult to measure results with the precision of energy resource programs but when effective, the efficiency device/process becomes the market standard and savings are broadly realized on a permanent basis.

1.2.3 Other common ratepayer funded efficiency goals are *environmental improvement* and *economic development*. Environmental goals arise from the fact that not all environmental harm (societal costs) resulting from the production of electricity is captured in the price of electricity. Thus, efficiency expenditures are made to reduce the environmental harm, such as efficiency programs targeted to reduce use that has a particular impact on air quality. Economic development goals target funds to geographical areas or sectors of the economy which are in need of an economic stimulus. Targeting industrial manufacturing process improvements to older manufacturing sites might be an example of this kind of efficiency program. This sort of comprehensive process improvement program is usually highly customized to an individual business. Process improvements often capture not only the economic benefit of lowering the cost of doing business (perhaps saving jobs) but often brings environmental benefits as well by reducing air, water or other waste outputs.

1.3. Collaborative Efforts

The collaborative efforts of multiple parties in a number of states have been a significant factor in designing administrative structures as well as in designing effective efficiency programs.[5] A formally organized collaborative (MA, CT) can be a logical outgrowth from the general commitment to the idea of consensus. Having multiple parties, each with a stake in the success of efficiency programs, reaching agreement about how programs should be administered strengthens the effectiveness of the administering institution regardless of which administrative structure is used.

Multi-party collaboratives have included efficiency providers, distributors and contractors of efficiency products and services as well as ratepayers, environmentalists, utilities, low-income representatives, state agencies and regulators. Reaching a unified vision can be tough work, but

[5] California also had a successful experience with a multi-party energy efficiency collaboration in 1989-90. See, Raab, California Demand Side Management Collaborative, *The Power of Environmental Partnerships*, (The Dryden Press, 1995.)

reaching consensus can add significant stability to the efficiency institution and to its programs.

1.4. System Benefit Funds and Administrative Structures

Many of the states discussed in this paper use a system benefits charge (SBC) or, public goods charge (PGC), placed on per kWh sales to fund energy efficiency. The creation and implementation of such charges was widely practiced during industry restructuring as a means of preserving a minimum level of funding for energy efficiency and other "public goods." The SBC funds are generally placed in the custody of the efficiency program administrator – the utility, the independent administrator or, the government administrator. In general, SBC's have proven to be an effective device for accomplishing their declared purposes, but these funds are vulnerable.

In the current era where almost all state governments are facing large budget deficits, any dedicated fund, including the SBC's, face serious threat of being raided to fill gaps in the state budget. The reassignment of SBC funds to general state budgetary purposes is most clearly a problem where SBC funds are held in a state account. For example, a portion of Maine SBC funds has been earmarked in the Governor's proposed budget for general state fund purposes. In Wisconsin, SBC funds avoided similar reassignments in the last legislature, only to face the same pressure in the Governor's current proposed budget. A portion of the Ohio Efficiency Fund has also been taken by the State legislature.

One might think these "raids" are less likely to occur where SBC funds are directly paid by the utility to its own program contractors or to a third party independent non-governmental administrator but the largest raid to date has occurred in Connecticut where the legislature has already appropriated $12million from the *utility-held* SBC account to the general fund and, the Governor's budget proposes to use the remaining $100 million. In Oregon, the fund held by the independent non-profit administrator was similarly threatened last year.

There are no raid-proof funds. Presumably, where efficiency costs are incurred as part of a utility's ordinary cost of doing business and not segregated into identifiable funds, as with traditional practice of integrated resource planning, there will be no state budget intrusion.

1.5. Evaluating Administrative Structures

A useful set of criteria for comparing administrative structures for ratepayer funded energy efficiency programs was suggested by Eto, et al 1998:

Compatibility with Broader Public Policy Goals
Accountability and Oversight
Administrative Effectiveness
Transition Issues.

We use these four broad criteria to organize our comparative discussion of the administrative structures in the surveyed states, adding the following sub criteria which we believe provides

deeper context for thinking about good outcomes from efficiency program administration:

- Compatibility with Policy Goals
  - Harmony of financial interests
  - Integrated resource portfolio
  - Resource Acquisition
  - Environmental improvement
  - Economic development
  - Energy Efficiency market transformation
  - Sustainability of effort over time
    - Funding stability
    - Institutional stability

- Accountability and Oversight
  - How is budget set
  - Who participates in program development (opportunity for public participation)
  - Are measurement and evaluation metrics integral part of program design
    - Program evaluation
    - Process evaluation
  - How are results verified?
  - Frequency of reporting
  - Protocols for periodic program review

- Administrative Effectiveness
  - Efficient, non-redundant administrative costs
  - Budget competency
  - Ability to acquire and retain high quality staff
  - Flexibility to adapt programs to evolving market conditions/opportunities
  - Ability to target funds geographically
  - Local options for program design

- Transition Issues
  - Start up costs of new organization covered
  - Smooth transfer of program responsibility