

HOW TEXAS WILL MEET ITS ENERGY EFFICIENCY GOALS

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ABSTRACT

While competition is being introduced in the retail electricity markets in Texas, efforts are also underway to structure a competitive market for the provision of energy efficiency and other competitive energy services. Under the state's 1999 electric utility restructuring legislation, the regulated distribution arm of each investor-owned utility must meet at least 10% of its annual load growth through energy efficiency, beginning January 1, 2004 (municipally-owned and rural electric utilities are specifically exempted). This will be accomplished with standard offer programs and limited, targeted market transformation programs. Eight new standard offer and market transformation programs have been developed and unveiled in the state that leads the nation in electricity consumption.

This paper describes the new programs and presents Texas' plan for addressing the following key issues:

- How the standardization of energy efficiency program design among the various utilities will be achieved
- How the new energy efficiency programs will be funded
- How measurement and verification (M&V) of energy efficiency measures and results may be simplified without unduly sacrificing accuracy
- What program outreach activities may be necessary and should be pursued
- How competition may be fairly promoted among all interested energy efficiency service providers (EESPs)
- How all Texans may have access to energy efficiency services as the electricity markets are restructured
- How customer protection provisions may be adequately addressed.

Also, achievements and lessons learned from pilot programs that were conducted in 2000-2001 are reported here. This paper is of particular importance to policy makers, analysts and other interested parties in areas where electricity markets are undergoing restructuring and similar challenges are being addressed.

BACKGROUND

On May 21, 1999 the 76th Legislature of the State of Texas passed Senate Bill 7, which amended several sections of the Texas Public Utility Regulatory Act (PURA). PURA §39.905 requires each electric utility to reduce customers' energy consumption by a minimum of 10% of the utility's annual growth in demand in Texas by January 1, 2004. To achieve this Energy Efficiency Goal (goal), utilities must provide incentives through standard offer programs or limited, targeted market transformation programs. Incentives are to be paid to EESPs or to retail electric providers for the acquisition of cost-effective energy efficiency savings.

The Public Utility Commission of Texas (commission) initiated the rulemaking proceeding in August 1999 under Project Number 21074, *Energy Efficiency Programs*. A total of nine workshops were held to elicit input from stakeholders on various aspects of the rulemaking. Additionally, parties held informal meetings to resolve many issues. Thus the rule was a result of a collaborative effort by all interested parties. On October 21, 1999 the commission subsequently voted to publish the proposed rule for comments in the *Texas Register*.

The commission adopted the Energy Efficiency Rule §25.181 (rule), relating to the goal mentioned above, to implement this particular section of the new legislation. In adopting this rule, the commission sought to achieve the installation of long-lasting energy efficiency measures that would result in reduced energy consumption and lower energy bills for Texas customers across all customer classes. To ensure that the goal would be reached, the commission implemented an interim goal at a level below the 10% goal that is to be reached by January 1, 2004. Other provisions of the rule includes:

- Each utility filed its Unbundled Cost of Service (UCOS) transmission and distribution (T&D) rates by April 1, 2000, which included specified funds for achieving the goal
- Standard offer and market transformation programs shall be implemented by January 1, 2002, at which time the commission-approved T&D rates become effective
- During the transition period from January 1, 2000 to December 31, 2001, electric utilities would implement energy efficiency programs

that spend all of the demand-side management (DSM) funds previously approved in each of the integrated utilities' bundled rates.

PROVISIONS OF SUBSTANTIVE RULE §25.181

The highlights of this energy efficiency rule include:

- Each investor-owned utility in Texas is required to administer and make available to all customers in all customer classes, market-based standard offer programs and/or targeted market transformation programs
- Each utility must meet 5% of its annual load growth in demand through energy efficiency by January 1, 2003, and 10% by January 1 of each year thereafter
- During the transition period from January 1, 2000 through December 31, 2001 interim goals were set by each utility, consistent with approved funding
- Annual load growth in demand is based on system peak, measured on the transmission system for retail customers from May 1 through September 30. The average is to be weather-normalized using weather data from the last 10 years and based on 5-year historical average rate of growth in demand.
- The proposed incentive levels for each customer class are set as a percentage of the utility avoided cost of generation (described below), unless the commission adopts different ceilings
- No single EESP may receive more than 20% of the incentive funds made available through a single standard offer program
- Utility administration costs may not exceed 10% of the total program costs until December 31, 2003 and may not exceed 5% thereafter.¹ These costs include funding for an independent M&V auditor for the year 2003.

Customer classes defined within the rule include Residential, Hard-to-Reach, Small Commercial, and Large Commercial/Industrial. The Hard-to-Reach customer class is defined as residential customers with annual household incomes at or below 200% of federal poverty guidelines. A Small Commercial customer is one whose aggregate peak demand does not exceed 100 kW, whereas a Large

Commercial/Industrial customer is one whose aggregate peak demand exceeds 100 kW.

Incentive levels paid for eligible energy efficiency measures are based upon the utility avoided cost of generation, set initially at \$78.50 per kW and \$0.0268 per kWh, both measured at the customer meter. These costs provide the basis for determining the maximum incentive that may be paid. Final incentives are based on the net present value of ten years' worth of energy and demand savings. Consequently, capacity and energy saving measures are expected to provide savings for a minimum of ten years.

Maximum incentive levels, expressed as a percentage of avoided cost, prescribed by customer class are:

- 100% for Hard-to-Reach programs
- 50% for all other Residential and Small Commercial programs
- 35% for Large Commercial/Industrial programs
- 15% for Load Management programs.

PROGRAM DEVELOPMENT PROCESS

The commission established the Energy Efficiency Implementation Project No. 22241 for the purpose of developing a portfolio of energy efficiency program templates consistent with the rule. On May 9, 2000 this portfolio consisting of nine program templates was filed with the commission, the result of the involvement of many of the same stakeholders that were previously involved in the development of the rule itself. Following a public workshop held to gather input from all interested parties, the commission approved eight of the nine program templates on May 18, 2000 for implementation on a statewide basis. The guiding principle for the development and commission approval of this portfolio of program templates was to ensure a consistent, standardized administrative approach across Texas and to fairly promote competition among the EESPs implementing measures in the various utility service areas. The resulting program templates are summarized in Table 1.

¹ A proposed revision to Subst. R. 25.181 allows utility administration costs to remain at 10% of total program costs after December 31, 2003, but as of the publication date of this paper the commission had not taken action to adopt such revision.

Table 1: Portfolio of Energy Efficiency Program Templates

Standard Offer Programs (SOP)		
1	Residential and Small Commercial	Provides incentives for some new construction (affordable housing and multi-family) and retrofit installations of a wide range of measures that reduce demand and save energy for residential and small commercial (<100 kW) customers.
2	Commercial and Industrial	Provides incentives for the retrofit installation of a wide range of measures that reduce demand and save energy in large commercial and industrial facilities.
3	Hard-to-Reach Residential	Provides incentives for some new construction (affordable housing and multi-family) and retrofit installations of a wide range of measures that reduce demand and save energy. The target market is families that fall 200% or below of federal poverty guidelines. Includes certain measures with less than a 10-year life.
4	Load Management	Promotes measures designed to affect the timing of electricity consumption.

Market Transformation Programs (MTP)		
5	Residential New Construction: Energy Star® Homes	Promotes the construction of new homes to the Energy Star® standards.
6	AC Distributor	Provides incentives to A/C distributors for the installation of high-efficiency air conditioning equipment less than 20 tons in size that are typically used in small commercial and residential applications.
7	AC Installer Training	Provides training to encourage superior air conditioning installation practices, as well as measures to reduce duct leakage.
8	Energy Star® Windows	Promotes the sale and installation of energy efficient windows meeting the Energy Star® standards.

UTILITY PROGRAM STANDARDIZATION – PLUSES AND PITFALLS

Throughout the process of developing the rule, defining customer class distinctions, and designing the portfolio of energy efficiency program templates, interested parties recognized a need for statewide standardization. EESPs with experience in other states where deregulation and competitive market development had already occurred or was occurring were instrumental in educating stakeholders regarding the need for consistent administration and program design across utility territory boundaries.

Standardizing programs allowed administering utilities to substantially reduce the cost of program development. Program standardization also helps large national or regional EESPs through use of common application and implementation procedures, as well as through common reporting requirements.

However, standardization has its pitfalls as well. Experience has shown that the programs need to be designed for the lowest common denominator. Where

utilities would like to keep program administration simple, complexity is forced to in order to clearly address situations that may rarely arise. Where utilities would like to be flexible, all participants must be treated impartially, which can harm local contractors who do not have the sophistication to operate with the mindset of a larger, national-scope EESP. Utilities are forced to incorporate burdensome checks and balances, along with rigid enforcement measures, to ensure that project sponsors are not gaming the system. All of these hurdles may inhibit participation of local EESPs who might have once been solid participants in the utilities' energy efficiency programs of the past.

In certain cases, some project sponsors have “tested” the program guidelines by installing lower efficient measures than are required, or skimping in providing customer education materials. Some have even committed acts of fraud. These kinds of unscrupulous activities by EESPs serve to harm the entire program, and force utilities to establish requirements beyond what might otherwise be

necessary rather than remain flexible.

MEASUREMENT AND VERIFICATION VERSUS DEEMED SAVINGS ESTIMATES

A goal of the program design process was to keep energy and demand reduction measurement and verification (M&V) procedures as simple as possible. Deemed savings values were calculated for a variety of residential measures and a select set of common commercial sector measures, and were subsequently approved by the commission.

The commission's Energy Efficiency Rule, §25.181(c)(3), defines a deemed savings estimate as "a predetermined, validated estimate of energy and peak demand savings attributable to an energy efficiency measure in a particular type of application that a utility may use instead of energy and peak demand savings determined through measurement and verification activities." Use of the deemed savings values can provide an inexpensive alternative to "full measurement and verification" activities, wherein pre- and post-installation meter data must be gathered.

The development and application of deemed savings values are justified in situations where the same measure will yield similar savings when installed in a wide variety of different settings, and in situations where more extensive measurement and verification activities would prove cost prohibitive.

In situations where an approved deemed savings estimate is not available for the particular measure(s) included in an eligible project, an EESP may pursue a "full measurement and verification" approach using the International Performance Measurement and Verification Protocols (IPMVP). With the utility's consent, an EESP may also elect to follow the IPMVP if the EESP believes that measurement and verification actions will result in a more accurate portrayal of the savings associated with the project than would application of the commission approved deemed savings values.

CUSTOMER PROTECTION PROVISIONS

The commission established customer protection rules for the energy efficiency programs. These rules are intended to safeguard customers from unscrupulous EESPs using the large influx of efficiency dollars to fund scams or take advantage of unwary customers. Utility administrators have incorporated these provisions in their standard offer program agreements and ensure compliance through their ongoing inspection activities.

Most of the customer protection provisions correspond to state or federal law regarding cooling off periods, complaint process, truth-in-lending and contractor liability. In addition, EESPs are required to disclose that the utility is paying an incentive. They are also required to provide an "all bills paid" affidavit to the customer to protect them against claims of subcontractors.

Thus far, there has been no observed negative effect on program success due to these customer protection provisions, nor have there been any substantive consumer complaints registered with administering utilities.

BUILDING A NEW AND COMPETITIVE MARKET FOR ENERGY EFFICIENCY

Texas utilities have undertaken an ambitious outreach effort, both for introducing their own pilot programs as well as providing information to potential participants through a statewide conference. The six investor-owned utilities administering programs in 2002 have mailed over 16,000 direct mail notifications of program availability, conducted local workshops reaching approximately 2,800 EESP representatives, and conducted a second statewide conference (Texas Energy Efficiency Conference) attracting 200 EESP representatives and other parties. Program administrators use news releases and the Internet as additional means of outreach.

According to the Energy Efficiency Rule 25.181 a utility cannot promote the programs directly to their retail customers, but must rely on EESPs to get the message to customers². This is to prevent an abuse of power by the utility companies by promoting a favorite EESP, or the utility's affiliated competitive retailer (CR). The utility is required to market the programs to EESPs and vendors but cannot promote or show preference to any particular EESP or vendor. This rule makes for a level playing field, so that all EESPs have an equal opportunity to be successful in the marketplace. They also have equal opportunity to fail if they don't search out the right customers or markets in which to sell their services. Therefore, marketing the program and associated energy

² A second proposed revision to Subst. R. 25.181 allows utilities the opportunity to promote the energy efficiency programs directly to large commercial and industrial customers, as long as the promotion activities are limited to outreach activities such as those provided to EESPs. The utilities will still be prohibited from offering any technical assistance or any other energy efficiency services.

efficiency services to the customer is the full responsibility of the EESP and vendors. They cannot rely on the utility to bring the customers to them. This in effect makes the utilities dependent on EESPs, which have contracts with customers, in order to deliver the contracted demand and energy savings to utilities. The challenge then for EESPs is to establish credible relationships with customers.

The commission agrees that customers should have access to a list of participating EESPs. This list will allow customers the opportunity to solicit multiple bids from EESPs and shop around for the best deal. It will also encourage competition and result in more incentives passed on to the customers. The Energy Efficiency Rule requires the commission to provide this list on its website³. Several utilities are voluntarily providing this list on each of their respective program websites as well, in order to provide contact information for EESPs with current contracts.

In addition, previous programs such as CPL's Standard Performance Contract (SPC) program, implemented in 1999, may have served as a stimulus for energy efficiency projects. Many of the project sponsors and/or customers that participated in the SPC program have shown a great deal of interest in participating in CPL's statewide program template-based Standard Offer program that has replaced the SPC program. By participating in the forerunner SPC program, participants have gained a great deal of confidence in the programs and have a better understanding of the process requirements.

FINDINGS AND NEW CHALLENGES

Over the past two years, programs based on the commission approved energy efficiency program templates have been conducted by American Electric Power (AEP), Entergy Gulf States, Oncor (formerly TXU Electric), Reliant HL&P, TNMP and Xcel Energy (SPS). Based on these efforts, some conclusions can be reported and new challenges identified. Some of these challenges have been addressed by proposing specific rule revisions that are currently under consideration by the commission. Others are more appropriately addressed within the context of program template modifications, or by the utilities themselves in administrative oversight. As with most programs of this type, some will be dealt with as the market matures for these types of services.

³ A third proposed rule revision eliminates the commission's responsibility for developing and maintaining such a list of EESPs.

Cream-skimming Is Very Difficult To Prevent

Not surprisingly, EESPs are focusing their efforts on measures that provide the greatest profit potential. Most of the measures installed through the residential standard offer programs have been limited to measures that reduce electric water heating use, such as low-flow showerheads, pipe wraps, and tank insulation, along with compact fluorescent bulbs, while commercial lighting retrofits are dominating the commercial and industrial programs. Changes in the programs are presently being reviewed to encourage greater comprehensiveness and variety in the measures completed through the programs to eliminate lost opportunities for efficiency.

Utilities With Rural Service Territories Are Having Difficulty Meeting Their Goals For Energy Efficiency

The utilities that serve major urban areas (e.g., Oncor and Reliant Energy HL&P) have experienced little difficulty in attracting the attention of major EESPs, and their standard offer programs quickly become fully subscribed. Yet, incentive funds remain available from the utilities serving rural or remote service territories, such as AEP-Southwestern Electric Power Company or AEP-West Texas Utilities Company.

M&V Requirements Have A Considerable Effect On EESP Interest In Programs

El Paso Electric Company's standard offer programs were designed prior to the establishment of §25.181 and (because retail competition has been delayed in this service territory) this utility has not yet designed its programs to conform to the requirements of the commission approved energy efficiency templates. While El Paso Electric Company's programs are similar to the standard offer programs offered by most of the state's other investor-owned utilities (and incentive levels are slightly higher), El Paso Electric's M&V requirements are generally more burdensome. These more stringent M&V requirements appear to be responsible for the lower participation that El Paso Electric Company has achieved in their programs.

The 20% Incentive Funds Limit To An Individual EESP Should Be Reconsidered

As presented earlier, no single EESP and its affiliates can receive more than 20% of the funds available from a single standard offer program. An EESP that receives its maximum share of incentive funds from Oncor's current Large Commercial and Industrial Standard Offer would receive \$1.6 million, while a participant receiving 20% of the incentive funds available from the same current program

offered by Texas-New Mexico Power Company would receive \$59,000. It would seem as though a reasonable cap on the payment to an EESP should fall somewhere in between these two extremes. Perhaps this cap should be re-defined in terms of total dollars, rather than a percentage of a program's total incentive budget.

Limitations On Administrative Costs May Be Prohibitively Low

Utility administrative costs were capped to ensure that at least 90% of all program funds were devoted to incentives or to the implementation of market transformation programs by third parties. Most of the utilities have expressed serious concerns that the remaining administrative budgets will be insufficient to permit the utilities to diligently perform project inspections, screen for "free-ridership", enforce compliance with the commission's rules, prepare reports to the commission, and fund the design of program refinements. These concerns will likely magnify as the 5% administrative cap approaches.⁴

As reported by several utilities in other states where deregulation and competition for energy efficiency services have been implemented, utility administration costs for similar energy efficiency programs range from 11% to over 50% of total program costs.

New Commercial Construction Must Be Addressed

At the time that the commission was reviewing and endorsing the energy efficiency program templates, the U.S. EPA had not yet completed the design of its Energy Star® Commercial Construction program. Consequently, the commission decided to delay consideration of a program to promote energy efficiency in this sector until the EPA had unveiled its program. Now that the EPA's program has been designed, there is renewed interest in adopting a program that will promote this energy efficiency opportunity in Texas. Utilities in Texas have recently begun efforts to provide for new construction eligibility, with the goal of making this additional component available for the 2003 programs.

Difficulties In Promoting Load Management Must Be Overcome

⁴ A proposed revision to Subst. R. 25.181 allows utility administration costs to remain at 10% of total program costs after December 31, 2003, but as of the publication date of this paper the commission had not taken action to adopt such revision.

For a variety of reasons, the load management measures permitted by §25.181 have been difficult to promote. The incentive cap placed on utility incentives for load management measures (i.e., 15% of avoided cost or about \$11 per kW per year) appears to be too low to attract any interest in such measures. The requirement that any measure must have a 10-year life may be difficult to apply to a load management program. Further, it has proven difficult to design a load management program that is compatible with the still-evolving electricity market structures being established for the Electric Reliability Council of Texas (ERCOT) and other power markets in Texas. And there is currently a maximum limit of 15% of a utility's demand reduction goal that may be met through Load Management programs.

New Statewide Building Energy Codes May Affect Savings

The Texas Legislature's 2001 session resulted in the introduction of statewide building energy codes in Texas. If these new codes prove effective in promoting energy efficiency in the construction of new buildings (and raise the baselines used in the programs' savings calculations), they may have the effect of reducing energy savings and demand reductions that can be claimed from some of the energy efficiency programs.

Energy Efficiency Program Marketing/Promotional Activities Limited To EESPs

Spreading the word regarding program offerings is limited to potential project sponsor EESPs. Utilities are in somewhat of a paradoxical situation in that they may know which customers have the best potential energy and capacity savings to be realized; however, it is ultimately up to the EESPs to inform and provide energy services to end-use customers. This could leave the smaller commercial and industrial customers, or customers in rural locations, with little opportunity to participate in utility-sponsored incentive programs.

CONCLUSION

In conclusion, the Texas energy efficiency programs are the latest models of standard offer and market transformation programs, and are tied to specific MW and MWh reduction targets and funding levels. Designed through a collaborative process, the programs have features that satisfy the needs of a variety of constituencies. The rules have been established and although a few changes are expected within the context of the revisions currently being proposed, the market should be stimulated for energy efficiency services. Customers are ready for new

service choices in areas where historical participation in utility-sponsored energy efficiency programs has been good.

Tying this all together is the EESP, the project sponsors. **Effective, honest, customer-driven energy efficiency services providers** can help make the market grow and flourish by becoming active in Texas. The markets are ripe for entry, and customers need and want effective energy services provided to them.

Texas utilities want to achieve their annual energy efficiency goals, but not at just any cost. It is vitally important that EESPs understand that gaming

the programs, or seeking loopholes in program parameters will not be tolerated. Just as the utilities are serious about achieving long-term energy efficiency, so should participating EESPs be serious about providing customers with services that will reduce demand, save energy and save money.

As the rules and/or markets continue to change, Texas will also regularly monitor market conditions and energy efficiency program results in order to implement changes as necessary to provide ample opportunities for energy efficiency in Texas. Future program iterations will necessarily address such issues as local and regional differences, flexible utility administration, and administrative cost caps, to ensure future program success.