PA Home Energy PUC Comments

November 14, 2008

Overview

The Pennsylvania Public Utilities Commission (PUC) and the Pennsylvania Electric Distribution Companies (EDC's) have both a tremendous opportunity and difficult job in front of them. The legislation passed has created an opportunity to expand energy efficiency and demand reduction services in Pennsylvania, to the benefit of the ratepayer, the utility, and the state as a whole. But to be effective, this expansion must work with and not replace the energy market transformation that is already taking place.

The opportunity is that state and utility programs will create broad additional demand for energy services. The danger is that the design of these new programs will interfere with, instead of supplement, consumer and conservation service provider investments that are currently creating an expanding market for energy services in Pennsylvania.

This effort is made even more difficult by the need to comply with the requirements of the legislation. Cost recovery and evaluation requirements relating to the TRC could create particularly difficult issues with regard to spurring market transformation efforts. A careful crafted, coordinated program and incentive design is necessary to support whole house programs and simpler rebate programs in the same environment. A balanced portfolio approach is in the utilities' and ratepayers' best interest. This approach can provide an appropriate combination of quick response with long term infrastructure development and market transformation.

PA Home Energy

These comments reflect the experience and concerns of the PA Home Energy Program, plus the on-the-ground experiences of Performance Systems Development in a number of other states across the country from the Northeast through Midwest to the West.

The objective of the PA Home Energy program is to establish a sustainable infrastructure for providing residential energy services in the State of Pennsylvania and to create market-based demand for those services. The PA Home Energy program is focusing on the Allegheny Power service territory, since it is currently funded by the West Penn Power Sustainable Energy Fund, but hasan eye to statewide expansion. These goals—sustainable infrastructure, market-based demand, and statewide expansion--have been key principles of the design and implementation of this program.

PA Home Energy has forged new ground nationally through an innovative combination of services and certifications for the new homes and existing homes markets. This combined program approach fits well with the development of a self-sustaining market that allows the credentialed PA Home Energy Service Providers to move between the new and existing homes sectors as demand for work shifts, thereby creating a more sustainable business model.

Both the new and existing homes programs are based on the nationally recognized ENERGY STAR brand. PA Home Energy has linked its new homes program to indoor air quality and the wise use of resources by including ventilation, combustion safety testing and an incentive based in part on house size. Similarly, its existing homes program includes combustion safety testing and performance-based consumer incentives. By including these factors, PA Home Energy has been able to forge linkages with green construction programs and green building organizations.

These innovations have required extra effort in the program development phase, but this effort is paying off with high contractor demand for trainings, and a certified core of companies that are now offering PA Home Energy audits and new home ratings both within and outside the Allegheny Power territory. Since the program began in August 2007, there have been eight rounds of training (each consisting of two full weeks of classroom and field training). These trainings have produced 37 RESNET-certified raters, 61 BPI-certified building analysts, and led to a total of thirty companies (many of which have several certified individuals) now listed as PA Home Energy service providers.

Program efforts this year have been focused on creating an infrastructure of companies to provide quality residential energy services in the marketplace, and marketing designed to educate consumers about the importance of home energy efficiency, and the value associated with the PA Home Energy logo. Marketing efforts have included major media and grassroots efforts, including creating a PA Home Energy website, setting up a consumer hotline, presence at and sponsorship of several home shows, television, radio, and print media spots in several markets, the PA Home Energy Conference (March 18 & 19, in State College), and the PA Home Energy/EPA workshop, "Strategies for Successful Home Performance Selling" (September 22 & 23, also in State College).

This effort has been accomplished with a combination of West Penn Power Sustainable Energy Fund staff, located in State College PA, and Performance Systems Development staff based in Meadville, PA and Ithaca.

This substantial investment in infrastructure and marketing is now yielding results, as reporting on existing home audits and energy improvement installations, as well as new home plan reviews and completed units, are starting to accumulate. Consumer incentives of almost $20,000 have been committed, and work in over 200 new and existing homes is now scheduled or under way.

Conservation Service Providers

Supporting the development of a strong infrastructure of conservation service providers is critical to being able to deliver energy efficiency and demand services to PA ratepayers.

The EDCs should collaborate or coordinate on contracting with and/or credentialing conservation service providers. Media markets and conservation service provider territories driven by factors such as media markets and geography frequently do not align with utility service territories. The burden of complying with the unique requirements of a multitude of different utility programs can be a serious overhead cost for smaller companies.

A number of the PA Home Energy Service Providers have already begun to offer new construction and existing homes services across the entire state. The EPA ENERGY STAR programs that are the foundation of PA Home Energy create an off-the-shelf common base for residential programs.

Competitive bidding of all contracts between consumers and service providers would seem an unnecessary burden. If a program calls for credentialing of a company and offers consumers access to incentives that require using a credentialed company, then the procurement burden should be on the consumer, not the utility. If utilities want to directly install measures or provide services through a single company, then a competitive procurement process would seem in order.

There are many credentialing options and to set a threshold centrally for all programs across all sectors would be either too high or too low for some programs.

Statutory Requirements

The establishment of a performance requirement in the legislation is important and this focus on **performance based measurement** should be supported by all programs implemented by utilities.

Since some programs are potentially designed to address **new construction**, PA Home Energy for example, residential and commercial new construction load should be added to the base assuming that the load is meeting relatively high standards of performance that go beyond code minimums. Such Standards can be based on EPA ENERGY STAR, the US Green Building Council LEED Standards or other standards. New industrial load could go through a similar review, with consideration of process load included. This will provide utilities with an incentive to address new load in the design phase and support economic development by allowing utilities to add to their base load for calculation of the load reduction targets.

Performance-based targets should include both **consumer actions** and installed measures. Should a utility be precluded from conducting an education program or redesigning their rate structure if this is the most cost-effective to convince consumers to reduce their energy use? It should be in the interest of the ratepayers, the utilities and the state to accomplish savings in the most cost-effective way possible.

Linking calculation of reductions only to individual measures, as is sometimes suggested, causes serious issues with the calculation of benefits resulting from **whole-house programs**. This is unfortunate, in that whole-house programs are widely understood to be the most cost-effective approach to improving safety, comfort, and efficiency in homes.

The regulation progressively sets forth performance targets; therefore, the evaluation process should not preclude the use of a performance-based approach.

Evaluation

The Total Resource Cost (TRC) calculation referenced in the legislation is a double-edged sword. While considered by many energy efficiency advocates to be friendly to energy efficiency programs, particularly when compared to some of the other California Standard Practice Manual test options, using the TRC actually creates strong disincentives for consumer investment in efficiency that may integrate with other consumer needs, such as comfort and health. Several common examples can help illustrate the issues here.

In the first example, a consumer is considering replacing a furnace that is 20 years old with a more efficient furnace. They know that in the next 5 to 10 years they will need to make an emergency investment in a furnace. They make the choice to invest now in part because of the age of the furnace. A strict interpretation of the TRC would penalize the program for the full cost of the consumer's investment, because the replacement cost of the furnace is not considered.

In the second example, a homeowner is plagued by allergies and actually has considerable doctor bills dealing with the allergies. The Home Performance with ENERGY STAR service provider diagnoses that duct leaks are bringing in allergens from the basement into the house. The house is also uncomfortable and the duct system is redesigned and sealed. There are energy savings that help pay for the renovation but the real impacts to the homeowner are in health and comfort. The job is submitted for an incentive. Should the full cost of the renovation be included in the TRC calculation? There were energy savings, but the motivation of the consumer was driven by other considerations.

In the third example, a program expends considerable effort to train and certify a conservation service provider. In the first year that service provider only produces 20 installation jobs that produce energy savings. But in subsquent years the initial investment of the program bears fruit as the service provider continues to produce jobs and even invests in growing their business. The up front investment of the program in training is paying off.

These examples happen every day in energy renovation programs across the country and can be extended to include commercial programs as well as residential programs. The complications in the first two cases are arising

because of the heavy-handed way that the TRC handles the inclusion of consumer investment to match up with the programs. The alternative for the EDC programs is to focus on shallow programs (appliance and lighting replacements for example) that do not require consumer investment in capital improvements in their building. In the third case, the program is penalized for creating the energy-saving machines (i.e., companies diagnosing and correcting energy issues in homes) that will help consumers generate deep energy savings.

Each of these scenarios has an evaluation solution. In the first case, the remaining life of the existing equipment can be used to reduce the cost of the replacement equipment in the TRC calculation. The state of Maine has developed TRC language to address this issue.

In the second case, non-energy benefits can be used to reduce the cost of the energy improvements in the TRC calculation. This influence of non-energy benefits in making the efficiency investments can be collected across the program participants by survey and the percentage reduction applied as part of the evaluation process. This approach is being considered by California and has been examined by the American Council for an Energy Efficient Economy with support from the US EPA.

In the third case, training and infrastructure investments need to be amortized out across more than one program year. Programs still need to be accountable for success, but should be allowed time to create the economic machines that will create long-term costeffective savings.

Another critical issue is the use of Deemed Savings over actual performance evaluation. This is common in residential programs because of the perceived cost of a performance based evaluation. A deemed savings evaluation tends to produce programs that focus only on installing the deemed measures, not on producing performance for the consumer. This is a case of total quality management where you can only control what you choose to measure. Failure to measure real performance creates a disincentive to create real performance. Given the performance based nature of the legislation, it should be in the EDC's interests to track actual performance, but encouragement on the part of the PUC here would be helpful. A starting point would be to encourage the leveraging of smart metering to create flows of energy usage information that will support a performance based evaluation process. Smart metering information can be used to improve the performance of the installations as well as to track the actual energy savings impacts. This area of technology is rapidly advancing across the country. Pennsylvania can play a leadership role in making use of energy information to help reduce energy use. The use of deemed savings calculations will be a significant deterrent to this technology development and energy savings performance enhancement.

Cost recovery

As indicated above, the design of the TRC is a critical influence on program design. A TRC with a short time frame, such as five years, effectively eliminates any investment in efficiency requiring any significant level of capital, or investments with longer measure life. Taking into account program costs, only the very few most cost effective measures will result in a positive TRC under those conditions, such as showerheads and lighting.

Program design would benefit if the Commission provided more information on what it would consider to be "prudent and reasonable" costs. An overly prudent program design will not have much chance of success in meeting performance goals. This additional information should include more support on interpretation of the cost tests requirements.

Program Design

Statewide adoption of programs makes sense in certain program areas, particularly those program areas with requirements for considerable consumer education. The EPA ENERGY STAR programs also provide a strong

platform for a statewide residential program design. Strong consistency in program design may be more important than a single common program. EDCs should have to meet certain minimums in program offerings. This will also help to drive consistency across utility service territories.

Coordination across utilities should allow for innovation in program design. Otherwise programs will be built from a least common denominator with less progressive utilities holding back the more progressive utilities.

Home Performance with ENERGY STAR and ENERGY STAR Qualified New Homes are likely to be more cost effective if implemented statewide. PA Home Energy has created a statewide service provider infrastructure that will create considerable savings for utility programs and has already gotten approval for its Home Performance with ENERGY STAR program plan, as required by EPA. This existing infrastructure will create a significant cost savings for utilities improving the likelihood that a program can be cost effective.

Existing Programs

As indicated previously, PA Home Energy is an existing program for new and existing homes, providing support to homeowners and conservation service providers statewide. Consumer incentives are provided within the Allegheny Power service territory.

Keystone HELP

Keystone HELP is an innovative and successful loan program that delivers greatly expanded access to energy efficient home improvements at a low cost to the state. Residential program designs should avoid duplication with this program and should instead seek to coordinate so that the Treasury's investment can be leveraged to provide even better opportunities for consumers.

It is likely that program designs will require additional level of professional credentialing beyond the current business credentialing done by Keystone HELP. The Keystone HELP application process could serve as a minimum.

PA Home Energy has been coordinating with Keystone HELP on how various levels of credentialing can successfully be supported.

A critical part of the coordination will be for utilities to obtain energy savings information from Keystone HELP. PA Home Energy and Performance Systems have been coordinating with Keystone HELP on how this need can be cost effectively met. The cost effectiveness considerations need to take into account the paperwork required of the conservation service provider. The effort associated with this paperwork becomes a cost either to the program or to the service provider and therefore to the customer. A single statewide loan program reduces this burden.

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