



**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**Comments Of
Citizens for Pennsylvania's Future
(PennFuture)**

Regarding

**Energy Efficiency and Conservation Program and EDC Plans
Docket No. M-2008-2069887**

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Introduction:

PennFuture is a statewide public interest membership organization, working to enhance Pennsylvania's environment and economy, with offices in Harrisburg, West Chester, Philadelphia and Pittsburgh. We appreciate the opportunity to provide comments on the development of Energy Efficiency and Conservation Program and EDC Plans in accordance with the provisions of Act 129 - Docket No. M-2008-2069887.

Act 129 sets forth ambitious reductions in electricity consumption and peak demand that if implemented thoughtfully and properly will create benefits to all Pennsylvania electric ratepayers.

We commend the Commission for working to implement Act 129 quickly to ensure that Pennsylvania ratepayers start to receive the benefits of energy efficiency and conservation. Energy efficiency is the most cost-effective and quickest means to reduce electric prices for all customer classes across the state. The states commitment to energy efficiency and conservation will help lower system-wide electricity costs, reduce customers' electricity bills, reduce risk, improve electric system reliability, reduce peak demand, mitigate environmental impacts, and promote economic development all while costing less than generating, transmitting and distributing electricity.

Our comments below provide details on the level of guidance the Commission should provide to energy distribution companies (EDCs) in developing their plans and likely procedural, technical, interpretive, and implementation issues that need to be addressed to ensure that the full potential of Act 129 is achieved.

1. Calculation of required reduction and setting goals

A critical aspect of the energy efficiency and conservation program is the calculation of the Electric Distribution Company's (EDC) expected load for June 1, 2009 through May 31, 2010 that future reductions will be measured against and the setting of future reduction requirements.

The Commission should create hard annual MWh and MW reduction goals that will ensure that EDCs are progressing towards the 1 percent and 3 percent reduction goals. Creating annual targets will provide EDCs with firm goals that must be reached and enable them to better craft a portfolio of programs. States like New York and Texas that have enacted percentage reduction requirements in overall electricity consumption have also forecasted out what the required reductions will be each year.

To ensure that the maximum levels of electricity load and peak demand reductions are achieved as was intended by Act 129, there are several factors the Commission should take into account when making these forecasts including rate caps and increased competition.

A. Rate Caps

When rate caps are removed in the remainder of EDC service territories, rates are expected to increase anywhere between 20 and 60 percent. It has been proven that higher electricity prices tend to lower a retail customer's electricity consumption. It is therefore important that the Commission take this into account when forecasting the expected load for the base year of June 1, 2009 through May 31, 2010.

For example, PPL's rate caps will expire on December 31, 2009, falling within the timeframe in which consumption reductions will be measured against - June 1, 2009 through May 31, 2010. Rates in the PPL service territory are expected to increase by 37 percent and retail customers may likely reduce their consumption due to higher prices. If the Commission does not take this potential reduction in consumption into account when forecasting load for June 1, 2009 through May 31, 2010, this baseline year may be set too high. If the baseline year is set too high, PPL may not need to take any action through energy conservation programs to meet the required reductions which was clearly not the intent of Act 129.

B. Retail Competition

When retail customers switch to a competitive supplier, the total retail consumption in an EDC's service territory is reduced. Therefore it is important that the Commission take retail competition into account when calculating both the baseline year and forecasted reduction requirements.

According to the Pennsylvania Office of the Consumer Advocate's Pennsylvania Electric Shopping Statistics there has been significant movement of customers to competitive suppliers in service territories where rate caps have expired.

Percentage of Customers Served By An Alternative Supplier As Of 10/1/2008				
	Residential	Commercial	Industrial	Total
Duquesne Light	21.3	16.6	46.5	20.9
Penn Power	10.6	11.9	67.5	10.9

Source: Pennsylvania Office of Consumer Advocate

Based on this experience, it should be assumed that similar customer migration to competitive suppliers may occur in other EDC service territories when rate caps expire. The Commission needs to take this into account when forecasting the required reductions for EDC's whose rate caps have not yet expired and also look at trends for those with expired rate caps. If the Commission does not take this into account, the forecasted reduction requirements may end up being far weaker than was intended by Act 129.

Other states with electricity consumption reduction targets have taken movement to competitive suppliers into account when calculating future required reductions. For example, when the New York State Public Service Commission was tasked with forecasting out the required annual MWh reductions for utilities to comply with the state's 15 percent reduction in electricity consumption by 2015, it subtracted out expected KWh loss due to competition in each year's target reductions to ensure that annual reduction targets would be accurate. We recommend that the Commission look to do the same in its forecast.

2. Evaluation process

The Commission has been tasked with creating an evaluation process, including a process to monitor and verify data collection, quality assurance and results of each plan and the program. The Commission will need to create a set of procedures for EDCs to follow when conducting measurement and verification of energy savings attributed to their programs to ensure that such savings estimates are defensible. The evaluation process will need to review both the individual programs and at the aggregate and cumulative levels, to track overall progress toward the electricity reduction goals. Achieving this objective will require consistency and transparency in the evaluation process as it is important to avoid having EDC plans evaluated with a multitude of methodologies, which would result in incompatible data and confusing results.

The creation of a rigorous measurement and verification framework in Pennsylvania is critical in assessing progress towards reduction goals, modifying programs to maximize efficiency, ensuring that projected energy efficiency savings are realized, and offering accountability to ratepayers.

The Commission should develop a common set of procedures for all EDCs to follow in the evaluation process. These should include deemed savings, defining baselines, formulas to calculate spillover, free ridership, and for converting net to gross savings from programs.

For deemed savings, we recommend that the Commission adopt the Technical Reference Manual (Docket No. M-00051865) adopted as part of the Energy-Efficiency and DSM Rules for Pennsylvania's Alternative Energy Portfolio Standard as the single set of transparent methods and parameters for on-going estimation of impacts based on the best engineering, verification and evaluation knowledge. We also advise that the deemed savings in this manual be updated and reviewed periodically as technology and savings estimates may change.

It is also important for the Commission to note that deemed savings are only appropriate for more common measures that are included in the Technical Manual, whereas more custom approaches including "whole house" retrofits may need more detailed measurement and verification. PennFuture recommends that the Commission adopt the International Performance and Measurement Verification Protocol (IPMVP) as the statewide standard for evaluation programs and measures not able to be evaluated by using the Technical Reference Manual.

The IPMVP is a flexible measurement and verification tool that provides evaluators with the ability to choose which level of rigor and cost is best for each program in their portfolio. The IPMVP is the accepted industry standard used by energy service companies (ESCOs) and is becoming the standard for more and more states including: Connecticut, California, and NYSERDA in New York.

What makes the IPMVP so attractive is its inherent flexibility. If the Commission chooses to use the IPMVP as the standard, those conducting the evaluation are then allowed to select from four measurement and verification approaches (Option A, B, C and D, shown in Attachment A) in

order to best match their specific project costs, savings requirements and particular measures or technologies.

The Commission should require that all programs that are selected to be part of an EDC's energy conservation plan include a comprehensive evaluation and monitoring plan that adheres to the procedures developed by the Commission. The details of the evaluation plans will vary depending on the size, scope, and type of programs, but all evaluation plans will be guided by the core principles of providing reliable, timely, and transparent results.

Each evaluation plan should include the following:

- Program summary, including goals and objectives.
- Process evaluation methodology - Process evaluation assesses program design, delivery, and implementation. It is also used to identify opportunities for program improvement and track program progress.
- Impact evaluation methodology - Impact evaluation quantifies energy and demand savings and identifies other potential impacts as appropriate (e.g., environmental benefits). This component should delineate the information to be reported, including energy savings, the appropriate measurement and verification approach, and how various attribution factors, such as free ridership and spillover, will be addressed.
- Net to gross analysis - Net to gross analysis is represented as a ratio that compares the gross savings of a program to the energy savings actually attributable to the program. Energy savings are estimated after adjusting for factors such as measurement error, measure installation quality, user behavior, and the actions program participants and non-participants would have taken absent the program (e.g., free ridership and spillover).
- Sampling strategies and sample design (e.g., did they use deemed savings from the Technical Manual or sampling strategies from the IPMVP)
- Data reliability standards (e.g., precision and confidence level for customer surveys, measurement and verification).
- Steps to identify and mitigate threats to data reliability (e.g., systematic error, random error) and uncertainty (e.g., assumptions, adjustments to data).
- Data collection and management process (e.g., what data will be collected and in what format?)
- Timeline for major evaluation milestones.
- Evaluation budget. EDCs should be spending between 2 to 5 percent of total energy efficiency program expenditures on measurement and verification.
- Policy describing how the program administration function will be organizationally separated from the evaluation function.

3. Analysis of the cost and benefit of each plan

The Commission is tasked with approving a Total Resource Cost (TRC) test to evaluate the cost-effectiveness of proposed EDC energy conservation plans in accordance with the definition set forth in Act 129. While the legislative definition provides some guidance, the Commission will need to further develop what costs and benefits are monetized as part of the test.

PennFuture recommends at a minimum the following cost and benefits be incorporated into the TRC test:

Monetary benefits:

- Avoided utility costs including: generation costs, transmission and distribution costs, including any deferred or avoided investments
- Resource Benefits – any savings in oil, gas or water saved by the customer due to the energy efficiency measure or program. (e.g. insulation could save customer oil heat, or HVAC improvements could save the customer natural gas).
- Operation and maintenance cost savings
- Rate benefits to all customer classes

Monetary Costs:

- Program Administrator Costs
- Participating Customer Costs

While the basic formula is simple, there can be controversy over what benefits and costs are appropriate to include and how to discount future net benefits. As a result, programs with high societal value and a fairly high program expense per unit of energy saved, such as residential low-income programs, might fail the TRC test but still be important components of the EDC plan. It is therefore important to allow enough flexibility to guard against vital programs being eliminated because of a failure to pass this test.

4. Standards to ensure that each plan includes a variety of energy efficiency and conservation measures and will provide the measures equitably to all classes of customers.

One way to ensure that conservation measures will be provided equitably to all customer classes is to develop set consumption reduction goals for each customer class instead of for the EDC as a whole. This will also help ensure that the costs of approved measures are financed by the same customer class that receives the direct energy and conservation benefits as required by Act 129.

5. Procedures to review all proposed contracts prior to the execution of the contract with conservation service providers.

The Commission should develop a set of criteria it will review when making a determination to approve contracts made between and EDC and a conservation service provider (CSP).

Within a contract, the CSP must demonstrate that it meets the following criteria before it can be approved by the Commission:

1. evidence of financial strength and capability (e.g., 10-K's for public companies and audited financial statements for private companies);
2. demonstration of professional experience;
3. demonstration of a solid work plan that covers the design, implementation, operation, and management of the project;
4. proof of all necessary insurance; and
5. a security deposit (or performance bond)

In addition, the EDC should be prepared with a contingency plan if for some reason the CSP is not able to achieve the required savings.

It is also important for the Commission to examine an EDC that does not contract out for its entire portfolio of programs. Given the short timeframe for developing programs, the Commission should make sure that an EDC has sufficient staff and infrastructure to ensure it is able to adequately roll out programs itself.

6. Level of commission guidance to EDCs in developing plans

A. Develop Goals

Given the relatively short time frame in which EDCs have to develop their plans, it is critical for the Commission to provide as much detail and guidance as to what should be included in the plans as well as set MWh and MW reductions.

The Commission should develop a set of underlying goals that each EDC plan should address:

- Transform markets and capture lost opportunities. Market transformation efforts involve working with the supply markets for energy efficiency goods and services, with potential incentives for manufacturers, retailers, service providers, and others, to influence the rate at which improved energy efficiency options become commercially available to customers.
- Address market barriers to energy efficiency on both a short and long-term basis, especially for special needs groups. EDCs should examine what current barriers to energy conservation exist in their service territory - for example, is it the higher cost of efficiency improvements; lack of knowledge; lack of market penetration for new products; lack of contractor training and knowledge to make energy improvements.
- Allocate resources in an equitable manner across all customer sectors.
- Pursue some uniform statewide programs between EDCs.
- Demonstrate measurable success in terms of environmental and economic betterment.
- Geographic and customer equity

B. Stakeholder group to advise utilities on plans and provide for utility collaboration

The Commission should develop a stakeholder group that will aid EDCs in developing their plans. For instance, in Connecticut the DPUC appoints members to an all-volunteer Energy Conservation Management Board. This board, comprised of representatives of an environmental group, the Office of Consumer Counsel, the Office of the Attorney General, the Department of Environmental Protection, the utilities, a statewide manufacturing association, a chamber of commerce, a statewide business association, a statewide retail association, and customers, advises and assists the utilities in the development and implementation of their comprehensive Conservation & Load Management plans as well as market transformation plans.

Regardless of whether the Commission utilizes a stakeholder group or board, there should be collaboration between EDCs to deliver certain programs to facilitate market transformation and branding. For instance, collaboration in New Jersey led to statewide coordination of several

programs such as the Energy Star home construction program. This sort of statewide standardization can make programs much more user friendly for the contractors and distributors involved in the implementation of the efficiency products and services. Programs that focus on items such as proper HVAC sizing and installation and duct sealing require certified contractors. Creating similar programs across service territories can help enhance contractor training and development. Common statewide or regional programs are necessary to help create consistent branding and marketing. For example, statewide and regional campaigns including “Flex Your Power” in California, “Cool Choice” in New England and New Jersey, and “Change a Light” at the national level have all been successful in part due to their consistent messaging and branding.

While it is important to have some statewide or regional programs, it is also necessary to have part of an EDC’s program portfolio cater specifically to the needs of its customer base. Some programs will be more effective in one service territory versus another due to differences in buildings stock and demographics.

Attachment A: IPMVP Summary of M&V Options

M&V Option	How Savings Are Calculated	Cost
<p>Option A: Focuses on physical assessment of equipment changes to ensure the installation is to specification. Key performance factors (e.g., lighting wattage or chiller efficiency) are determined with spot or short-term measurements and operational factors (e.g. lighting operating hours or cooling ton-hours) are stipulated based on analysis of historical data or spot/short-term measurements. Performance factors and proper operation are measured or checked annually</p>	<p>Engineering calculations using spot or short-term measurements, computer simulations, and/or historical data</p>	<p>Dependent on number of measurement points. Approximately 1-5% of project construction cost of items subject to M&V.</p>
<p>Option B: Savings determined after project completion by short-term or continuous measurements taken throughout the term of the contract at the device or system level. Performance and operations factors are monitored.</p>	<p>Engineering calculations using metered data</p>	<p>Dependent on number and type of systems measured and the term of analysis/metering. Typically 3-10% of project construction cost of items subject to M&V.</p>
<p>Option C: After project completion, savings determined at the "whole-building" or facility level using current year and historical utility meter (gas or electricity) or sub-meter data.</p>	<p>Analysis of utility meter (or sub-meter) data using techniques from simple comparison to multivariate (hourly or monthly) regression analysis.</p>	<p>Dependent on number and complexity of parameters in analysis. Typically 1-10% of project construction cost of items subject to M&V.</p>
<p>Option D: Savings determined through simulation of facility components and/or the whole facility</p>	<p>Calibrated energy simulation/modeling; calibrated with hourly or monthly utility billing data and/or end-use metering</p>	<p>Dependent on number and complexity of systems evaluated. Typically 3-10% of project construction cost of items subject to M&V.</p>

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