



Pennsylvania Department of Environmental Protection

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December 8, 2008

Office of Energy and
Technology Deployment

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HAND DELIVERED

Pennsylvania Public Utility Commission
Attn: Secretary
P.O. Box 3265
Harrisburg, PA 17105-3265

Re: Docket No. M-2008-2069887	Energy Efficiency and Conservation Program and EDC Plans
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Dear Secretary McNulty:

Enclosed please find an original and fifteen copies of the Department of Environmental Protection's responses to Additional Questions related to the Commission's Energy Efficiency and Conservation Program at Docket. No. M-2008-2069887.

Respectfully Submitted,

Daniel Griffiths
Deputy Secretary Director
Energy, Innovations and Technology Deployment

Enclosure(s)

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**Additional Questions Related to the Commission's
Energy Efficiency and Conservation Program at Docket No. M-2008-2069887**

1. Efficiency targets/Goals:

- a) Should the Commission use the average usage during the 100 highest peak hours during the entire reference year, or the average usage during the 100 highest summer peak hours when calculating the peak demand reduction targets for each EDC?

The Commission should use the 100 highest peak hours during the entire year. Since some EDCs have peak hours that occur in winter and summer, using the summer peak hours exclusively will not accurately address when peaking hours occur for all EDCs. Using the 100 hours from the entire year will direct EDCs to provide a broader set of demand reduction measures that address winter peaking hours as well as summer. The language in Act 129 does not indicate a seasonal or any other preference so the Commission should make the simplest interpretation, viz., that the 100 highest peak hours during the entire year must be used.

- b) Does Act 129 require reductions down to a fixed level, or require a fixed amount of decrease? How should this be calculated? Should the consumption reduction requirements contained in Section 2806.1(c) be treated the same as the demand reduction requirements contained in Section 2806.1(d)?

As stated in Acting Secretary Hanger's testimony to the Commission at Docket No. No. M-00061984 *Investigation of Conservation, Energy Efficiency Activities, & DSR by Energy Utilities & Ratemaking Mechanisms to Promote Such Efforts*, the Department believes that § 2806.1(c) requires EDCs to demonstrate that they have conserved the requisite amount of electricity – not that they have achieved a net reduction in electricity sales.

§2806.1(c) states:

(c) Reductions in consumption.--The plans adopted under subsection (b) shall reduce electric consumption as follows:

(1) By May 31, 2011, total annual weather-normalized consumption of the retail customers of each electric distribution company shall be reduced

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by a minimum of 1%. The 1% load reduction in consumption shall be measured against the electric distribution company's expected load as forecasted by the commission for June 1, 2009, through May 31, 2010, with provisions made for weather adjustments and extraordinary loads that the electric distribution company must serve.

(2) By May 31, 2013, the total annual weather-normalized consumption of the retail customers of each electric distribution company shall be reduced by a minimum of 3%. The 3% load reduction in consumption shall be measured against the electric distribution company's expected load as forecasted by the commission for June 1, 2009, through May 31, 2010, with provision made for weather adjustments and extraordinary loads that the electric distribution company must serve.

The Department acknowledges that this section is ambiguous but believes that the goals of Act 129 will be best achieved by following the "savings approach". Conserving the amount of energy called for by Act 129 in the time frames provided may be difficult. Requiring a net reduction in total sales within those same time frames and with an expense cap of 2% of 2006 sales is most likely impossible.

Conservation programs in California have taken years to achieve decreases in per capita consumption. Following the "reduction approach" would create a very real risk that the goals in Act 129 will not be achieved. At worst, this could lead to abandonment of this extremely important program. Following the savings approach will yield substantial reductions in energy consumption and set the table for long term successes.

Another key benefit of the savings approach is that success of the programs will be easier to verify. Factors such as weather and economic conditions will not have the same degree of influence over the measurement and verification process. As a result, more money will be spent on energy conservation programs rather than on costly verification measures. To be clear however, all energy conservation programs must undergo a rigorous measurement and verification process to ensure that rate payer funds are prudently spent.

With regard to § 2806.1(d), the Department believes that reductions in peak demand should also be based the "savings approach". However, the Department is skeptical that peak demand reduction measures also result in significant reductions in consumption. Successful peak load reduction programs result in load shifting. As such, the Department urges that the

Commission prohibit EDCs from “double counting” the benefits of their conservation or peak demand programs. Measures should be identified as for either energy conservation or peak demand – but not both. This will ensure that the greatest reductions in consumption and peak demand are actually achieved.

2. Program Design:

- a) Statewide vs. EDC specific: Should the Commission encourage, by policy, a statewide approach to some programs that are likely to be effective across Pennsylvania? For example, should rebate programs be harmonized across the state? Should specific programs, such as Energy Audits, PJM load reduction programs, Home Performance With Energy Star, and Energy Star Homes be consistently available in all EDC service territories? If so, what programs should the EDCs implement consistently across the state?

The Department believes there are significant benefits to both customers and EDCs to a statewide approach with certain programs. In particular, any program that utilizes national auditing or analysis standards as a reference for measurement and verification should be considered for statewide application. This would include BPI/RESNET energy audits, Home Performance with Energy Star, Energy Star Homes, all of which should be required for statewide implementation because they all provide a means to measure and verify the effectiveness of the programs.

- b) Can Act 129 programs have negative impacts on existing cost effective energy efficiency and demand side programs by 3rd parties? If so, how can this Commission avoid damaging existing 3rd party efforts when socializing Act 129 energy efficiency and demand side programs through non-bypass able charges to all customers, while increasing customer participation in these services?

It is possible that programs developed in response to Act 129 could have negative impacts on existing, cost effective demand side programs. Therefore, Act 129 programs should incorporate the principle of maximum coordination among programs. In addition, the Department urges that the Commission ensure that authorized programs do not undermine existing programs. In order to ensure this, new programs should not be created in isolation from existing programs. EDCs should be directed to develop their energy efficiency and conservation programs in coordination with the existing third party programs. Coordinated development of new programs

could provide EDCs with the opportunity to learn from the existing programs and to harmonize their efforts in providing services. Best practices will arise sooner if utilities work together whenever possible.

- c) Should the Commission seek to harmonize Act 129 programs with other Federal, State, local, RTO or other group programs? If so, what specific programs should this Commission encourage EDCs to replicate, incorporate, or leverage as part of their compliance filings? How can this best be achieved?

The Commission should harmonize Act 129 programs with existing programs, including Energy Star and the PJM demand response programs, to provide greater efficiency of delivery and provide a more uniform energy efficiency and conservation message to customers across EDC service territories.

3. Total Resource Test

- a) How can the Total Resource Cost Test that must be approved by the Commission under Sections 2806.1(a)(3) and 2806.1(b)(1)(i)(I) be simplified?

The Department notes that the Commission's Working Group Draft Implementation Order (dated November 26, 2008) proposes to adopt the *California Standard Practice Manual – Economic Analysis of Demand-Side Programs and Projects*. The Department agrees that assessing, adopting and implementing existing nationally recognized model(s) as baseline reference document(s) will help to simplify the TRC test methodology process. Additional examples of potential programs for the Commission's consideration include the Massachusetts TRC test methodologies, holistic approach built environment rating system programs like USGBC's LEED, energy efficiency programs such as EPA's Energy Star and incorporating best practice recommendations from national and regional TRC studies similar to those conducted by ACEEE and Levy Associates. The listed programs are widely recognized as leaders in their fields and are considered among the best examples of program evaluation tools.

- b) The Act defines "Total Resource Cost Test" (TRC test) as "a standard test that is met if, over the effective life of each plan not to exceed 15 years, the net present value of avoided monetary cost of supplying electricity is greater than the net present value of the monetary cost of energy efficiency conservation measures." Under this definition, may the Commission limit consideration of monetary costs to the costs incurred by the EDC?

The Department recommends EDC cost contributions, valued benefits, and measure (ECM) life all be prorated based upon the ratio of installed measure life relative to plan life. Likewise, the Department recommends that an EDCs portion of investment relative to the overall measure cost be used .to define the percentage of savings attributable to the EDC.

- c) Can the TRC test include avoided environmental costs or other avoided societal costs?

Any TRC should be designed to account for quantifiable environmental benefits even when these may not be easy to monetize. For example, compliance with some existing environmental requirements, including mercury, is not fully in force. However, scheduled compliance is already having impacts on the costs of environmental controls and this will continue to increase for some fuels and plants on a known schedule. These impacts can be estimated based on existing models. Those costs should be included in determining full costs of future generation. The Department is conversant with some of this modeling and invites Commission staff to discuss these impacts.

- d) If the Commission limits costs considered under the TRC test to those incurred by the EDC, should the Commission exclude costs not incurred by the EDC from the test?

The Department has no comment on this question.

- e) If participant costs that are not paid by the EDC are included, should these costs be reduced by tax credits or credits under the AEPS Act received by the participants

Participant costs that are not provided by the EDC should not be credited to the EDCs for ECM evaluation but should be included as part of the TRC test.

- f) What elements of the "avoided monetary cost of supplying electricity" should be included in the TRC test?

"Avoided monetary cost of supplying electricity" should include all costs related to securing electricity supply as well as for the supply itself including energy, capacity, ancillary services and all other necessary charges.

- g) Should these costs be valued at the "marginal costs for the periods when there is a load reduction" as required by the draft Implementation Order? What does this mean precisely?

ECM cost (and benefit) evaluation should be based upon actual periods of ECM implementation and should therefore use real time pricing (RTPs). RTPs are actual energy costs so the value of measures should be measured against these costs in order to determine actual benefits. Any other approach will undervalue the benefits of peak load reduction.

- h) Should the methodology for calculating the Net Present Value (NPV) and B/C ratio set forth in *The California Standard Practice Manual - Economic Analysis of Demand-Side Programs and Projects* (July 2002) be used, or is there a better alternative?

The California and Massachusetts methodologies should both be considered. In addition, there should be a continuous improvement process put into place to allow periodic adjustments and improvements to the selected methodology. This will vary depending on the type of measure, the rate at which implementation takes place, and the availability of performance information. For example, a two-year review and implementation cycle would be consistent with building industry standards and regulations such as high performance building guidelines and building codes, since these change on a cyclical basis. At the other extreme, some specific measures can be quickly assessed to determine effectiveness. For example, a demand response measure that has no detectable impact on peak load should be immediately scrutinized to determine whether it should be changed.

- i) What discount rate should be used in the calculation of NPV? How frequently should it be reevaluated? Should it be established for each EDC service territory, or for the Commonwealth as a whole?

The discount rate used in calculation of Net Present Value (NPV) should be based on a readily available Federal Fund Rate and should be uniform for all EDCs. Massachusetts uses a discount rate equal to the yield on 30-year United States Treasury Bonds at the close of trading on the first business day each year.

- j) Should the elements used in the calculation of an EDC's total annual revenue be the same elements used to calculate the "avoided monetary cost of supplying

electricity" under the TRC test?

Yes, as discussed above in (f) and (g) "avoided monetary cost of supplying electricity" should include all costs related to securing electricity supply as well as for the supply itself including energy, capacity, ancillary services and all other necessary charges. ECM cost (and benefit) evaluation should be based upon actual periods of ECM implementation and should therefore use real time pricing (RTPs). RTPs are actual energy costs so the value of measures should be measured against these costs in order to determine actual benefits.

- k) The gas industry raised some interesting points on the net impact of displacing natural gas heating equipment (space and water) with electricity heating equipment. Should the TRC test include parameters to capture the consequences of net energy gains or losses in delivering alternative fuels to consumers?

Yes, total resources should include all costs and benefits, thus the impacts of fuel switching should be evaluated in a TRC test.

4. Evaluation, Measurement and Verification:

- a) Should the Commission use a statewide, independent evaluator hired by the Commission to review EDC compliance with Act 129, pursuant to 2806.1(b)(1)(i)(J)? What would be the advantages and disadvantages of consolidating this review process?

Uniformity of evaluation ensures consistency of results, comparability of similar measures and identity of best practices. The Department recommends the Commission contract for a single statewide independent evaluator to review EDC compliance. This will ensure a uniform approach to reporting and evaluating the efficacy of the programs. This role would be consistent with the requirements of the Commission's program as enumerated in the legislation (§2806.1.(A) 2, 3 and 9). Costs for this third-party contract can be recovered from the EDCs in accordance with §2806.1.H.

If there were more than one evaluator, data would have to be normalized to provide an "apples to apples" comparison among the programs. The Commission should use the RFP process to select an independent statewide evaluator. The Commission solely should be responsible to develop a prescriptive RFP process consisting of a non-biased RFP evaluation team

resulting with a winning bidder or bidders that are not only the most cost effective but highly experienced in evaluating, measuring and verifying outcome results of various programs among the customer sector base. Utilizing an independent evaluator and consolidating the review process would lend itself to providing a primary goal of an equal comparison among the programs within the Commonwealth and concomitantly providing a secondary goal of a scorecard for Pennsylvania on a national scale. ACEEE is currently in the process of studying Pennsylvania for renewable energy and energy efficiency program potential. It would be prudent to incorporate any of the findings into future E, M and V studies. (Steve Nadel and Maggie Eldridge at ACEEE can be contacted at 202-507-4004 .)

- b) What programs lend themselves to a "deemed savings" approach, and what programs require more rigorous pre- and post-verification processes? How often should savings estimates be reviewed and how?

"Deemed savings" is a pre-established validated estimate of energy and peak demand savings attributable to an energy efficiency and or conservation measure. The Department recommends the Commission only employ the "deemed savings" approach where well established performance is available. For example, NYSEERDA's New York Energy \$martsm maintains a "deemed savings" database on a portfolio of approximately 40 programs plus stand-alone initiatives. Extensive work was required to develop the "deemed savings" database. Early work involved organizing measures with stipulated savings for evaluation purposes, checking savings values for accuracy and continuous scheduled updating of new measures added as needed. It tracks 457 measures, including approximately 60 gas efficiency measures and a measure is defined by program application and used in customer application forms each "deemed savings" database measure maps to a unique program measure code. Additionally, deemed values for kWh, kW (summer peak), MMBtu, water savings, as well as measure lives and incremental costs are included. The majority of values are based on secondary research, but modified or augmented as needed for local weather and markets. All savings values have been reviewed for application in New York. All research assumptions and sources are documented.

The Commission should utilize the Technical Reference Manual ("TRM") to fulfill the evaluation process requirements contained in the Act. The TRM was adopted by the Commission in the Alternative Energy Portfolio Standards. The Commission should require EDCs to develop a continuous

data quality improvement to establish how often the savings estimates are to be reviewed and how.

The Department supports a “whole building” program for pre- and post-verification processes. Rather than providing a number of possible measures according to convenience or the customer’s wishes, this focuses program resources on measures that are identified as cost-effective through mechanisms that satisfy the quality assurance standards defined in the act, i.e., auditing and inspection measures. If programs are designed in a thoughtful and coordinated way, for example using the whole building approach, Home Performance with Energy Star, methodologies are readily available for pre- and post-verification processes (see California Public Utilities Commission EM & V website). Savings should be reviewed annually through the E. M and V process.

- c) The Commission has a revised draft update to the 2005 Technical Reference Manual (TRM) that provides energy savings calculations for standard measures. The draft update is ready to be reviewed by interested parties. Should the Commission use a Secretarial Letter process to seek comments on this and subsequent updates to the TRM in the future? What timetable would be optimal for periodically updating the TRM?

The Department recommends that the Commission use the Secretarial Letter process to solicit comments on changes to the TRM for standard measures. There should be a continuous improvement process put into place to allow periodic adjustments and improvements to the selected methodology. This will vary depending on the type of measure, the rate at which implementation takes place, and the availability of performance information. For example, a two-year review and implementation cycle would be consistent with building industry standards and regulations such as high performance building guidelines and building codes, since these change on a cyclical basis. At the other extreme, some specific measures can be quickly assessed to determine effectiveness. For example, a demand response measure that has no detectable impact on peak load should be immediately scrutinized to determine whether it should be changed.

- d) In addition to the TRM for standard measures, should the Commission adopt a standard measure and evaluation protocol for determining the energy savings from the installation or adoption of non-standard or custom measures not addressed in the TRM? If so, what protocols should be adopted? Comments to

date have included the following protocols: 1) International Performance and Measurement Verification Protocol; 2) ISO New England Protocol; and 3) DOE Energy Star

EPA's Energy Star Portfolio Manager and International Performance and Measurement Verification protocols could be modified to accommodate installation of non-standard measures because they are open and transparent. The IPMVP provides an overview of current best practice techniques for verifying results of energy efficiency and renewable energy projects in commercial and industrial facilities. Internationally, it is the most recognized M&V protocol for demand-side energy activities. The IPMVP was developed with sponsorship of DOE and is currently managed by a non-profit organization that continually maintains and updates the Protocol.

- e) How might the Commission simplify and streamline the monitoring and verification of data so as to maximize resources for program measures but enable a thorough evaluation of program results consistent with Act 129 requirements?

Monitoring and verification of data could be simplified and streamlined by having the Commission require all EDCs and CSPs to utilize the same E, M and V protocols such as those used by the Energy Star programs. The use of protocols that are already proven, are widely accepted and are specific to customer sectors will facilitate effective monitoring.

- f) Should the Commission adopt standard data collection formats and data bases for the evaluation of program benefits and results that would be used across all EDC service territories?

The Department strongly recommends that the Commission adopt standard data collection formats and data bases for use across all EDC service territories. Not only would the data collection and evaluation be uniform, costs for translation programs or additional study modeling would be reduced. The Department suggests that the existing Energy Star Portfolio Manager data collection protocols offer a ready-made means for collecting and storing information regarding industrial and commercial customers. This ensures the consistency of data over time, provides a common database through which many sorts of analysis – particularly verification of energy savings - are supported, and offers a long-established and very widely used system supported by the Department of Energy. In addition, this platform is readily available to all utilities and contractors. This approach also makes available energy analysis tools that will permit the Commission to easily

track ongoing program results, an opportunity that will be particularly important in the first few years of the program. The Department urges that the Commission require that all utility plans include this platform. As to residential customers, the Department asks that the Commission choose a standard format that will be consistent with Portfolio Manager.

5. Revenue Requirement:

- a) The Act defines "Electric Distribution Company Total Annual Revenue" as amounts paid to the EDC for "generation, transmission, distribution and surcharges" by retail customers. What "surcharges" should be included in the calculation of an EDC's total annual revenue?

The language of this definition is clear and unambiguous. Act 129 does not exclude any surcharge from the definition of "Electric Distribution Company Total Annual Revenue" nor is there any indication that some surcharges are not appropriate to consider in determining this amount. The Department suggests that the absence of legislative language regarding surcharges is an indication that all revenue sources should be considered. Therefore any and all surcharges paid by retail customers must be included in the calculation. It is important to include all surcharges in this definition because this determines the amount of program funding available per Section 2806.1(g).

While current economic conditions are likely to reduce energy costs, artificially low cost implications are imposed, insufficient measures will be implemented to address peak demand and conservation needs when robust economic activity resumes.

6. Cost Recovery Issues:

- a) Can one class of customers have EE&C charges in excess of 2% of class revenues, due to an abundance of cost effective opportunities relative to other customer classes, while overall EE&C charges remain below 2% of revenues for the utility as a whole?

The Department recommends that the Commission find that the goals of Act 129 cannot be met unless the most cost effective conservation and demand measures are fully implemented. This requires that cost effectiveness be the standard of success – not dollars spent per class customer class. Nothing in Act 129 places a cap on the amount spent per customer class and section

2806.1(g) clearly states that the *total* cost of any plan shall not exceed 2%. In addition, because section 2806.1(a)(11) requires costs to be recovered from the customer class that receives the direct benefits of the measures, there is no concern over one customer class subsidizing another.

7. CSP Issues:

- a) Does the definition of "Conservation Service Provider" (CSP) in the Act prohibit an affiliated company of an EDC from serving as a CSP to an EDC other than its affiliate?

The Department suggests that the intent of this definition does not extend to prohibit an EDC affiliated CSP from serving as a CSP to any other EDC.

- b) Are there existing barriers to CSP market development that the Commission should address in the context of Act 129? For example, what data access, meter access or other barriers should the Commission accelerate resolution of in order to enhance Act 129 goal achievement?

Within the context of Act 129 the Commission is in a position to address CSP market development barriers. These are not limited to the ease of data acquisition and exchange and extend to increasing the number of qualified providers. Training, verification of savings and quality control / quality assurance are examples of other impediments to CSP market development. Therefore, the Department recommends that the PUC become the Commonwealth sponsor of the EPA's Home Performance with Energy Star program, as this program provides the necessary framework and funding sources for consistent training and workforce development in all EDC service areas.

The Department urges the Commission to work with stakeholders, including conservation service providers, to develop uniform statewide standards to automate access to customer's usage and demand data information, establish a uniform standard for exchange of the data and to unify and streamline the process that customers follow to allow authorized third parties access to their usage data. To speed the stakeholder process the Department recommends adopting standards similar to California legislation which requires all EDCs (and other utilities, such as natural gas and water) to use a standardized XML schema as defined by the EPA for use in the Portfolio Manager program. In addition, the Department recommends that the Commission set technical standards for the qualifications of CSPs. This will provide

certainty needed to allow the labor market to increase. Additional technical requirements can be established as the potential pool of qualified labor can be anticipated to become available.

- c) How should the Commission ensure that EDC self supplied EE&C programs are more cost effective than similar services offered by CSPs? Should this Commission require EDCs to demonstrate in their implementation filing that their self supplied program is more cost effective than similar CSP provided services?

The Commission should require EDCs to demonstrate that self supplied energy efficiency and conservation programs are not competing with similar services cost effectively provided by CSPs in their service territory. Only when utility affiliated CSPs clearly demonstrate that their self supplied program is more cost effective other CSPs should the utility affiliate be permitted to enter the market. The CSP and EDC efforts should be evaluated using the same cost effectiveness criteria and this comparator should be included with the EDC's plan filing.

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