



Via electronic submission - May 11, 2015

**Comments of Northeast Energy Efficiency Partnerships (NEEP)
On Docket No. M-2015-2469311
Implementation of the Alternative Energy Portfolio Standards Act of 2004:
Standards for the Participation of Demand Side Management Resources—Technical
Reference Manual 2016 Update**

Rosemary Chiavetta
Pennsylvania Public Utility Commission
Secretary, P.O. Box 3265
Harrisburg, PA 17105-3265

Dear Secretary Chiavetta,

On behalf of Northeast Energy Efficiency Partnerships (NEEP),¹ please accept these comments in response to the Public Utility Commission's ("the Commission") request for comment regarding M-2015-2469311, the Implementation of the Alternative Energy Portfolio Standards Act of 2004: Standards for the Participation of Demand Side Management Resources—Technical Reference Manual 2016 Update. NEEP is a non-profit organization, established in 1996, whose mission is to accelerate energy efficiency in homes, buildings and industry across the Northeast and Mid-Atlantic region. NEEP is one of six Regional Energy Efficiency Organizations (REEOs), as designated by the U.S. Department of Energy (DOE), which works in cooperation with the DOE to support states in, among other things, establishing comprehensive energy efficiency programs.

The Regional Evaluation, Measurement and Verification Forum (EM&V Forum), a NEEP project launched in 2008, consists of nine jurisdictions across the Northeast and mid-Atlantic regions² and supports the development and use of consistent savings assumptions and standardized guidelines and tools to evaluate, measure, verify, and report energy and demand savings, costs, and emission impacts of energy efficiency. The EM&V Forum first developed the Mid-Atlantic Technical Reference Manual (Mid-Atlantic TRM) in 2010 for Delaware, the District of Columbia, and Maryland. The EM&V Forum continues to manage and annually update the Mid-Atlantic TRM, now in its fourth update.

Introduction

In its notice dated March 26, 2015, the Commission has requested public input to the Technical Reference Manual (PA TRM), which is used to assess energy savings attributable to energy efficiency and demand response measures for the implementation of the state's Alternative Energy Portfolio Standards Act (AEPS Act) and the energy efficiency and

¹ These comments are offered by NEEP staff and do not necessarily represent the view of NEEP's Board of Directors, sponsors or underwriters.

² EM&V forum participating jurisdictions include Connecticut, Delaware, District of Columbia, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont.



conservation provisions of Act 129 of 2008. We applaud the Commission for updating the TRM and offer thanks for the opportunity to provide input. We are pleased that the Commission is making use of the Mid-Atlantic TRM developed by the Regional EM&V Forum for Maryland, Delaware, and the District of Columbia; we also applaud the Commission's use of the DOE's Uniform Methods Project. Our review of the PA TRM revealed that the Commission may not have been aware of the most updated Mid-Atlantic TRM version. Further, we note several other recent Forum products that might prove helpful to the PA update process. We bring these updates to the Commission's attention given references to the Mid-Atlantic TRM throughout the PA TRM.

Response to the Commission's Request for Comment:

To ensure the Commission is aware of specific updates around the Mid-Atlantic TRM, we provide the following information and relevant links:

Mid-Atlantic TRM Version 4.0

The latest Mid-Atlantic TRM Version 4.0, released June 2014, is available on our website (http://www.neep.org/sites/default/files/resources/Mid_Atlantic_TRM_V4_FINAL.pdf) and includes updates to as well as a couple added measures; an asterisk indicates an added measure:

Residential

- General Purpose CFL Screw base
- Specialty CFLs
- Hardwired CFL Fixtures (Interior)
- Hardwired CFL Fixtures (Exterior)
- Solid State Lighting (LED) Recessed Downlight Luminaire
- ENERGY STAR Integrated Screw Based SSL (LED) Lamp
- Freezer
- Refrigerator Early Replacement
- Refrigerator and Freezer Early Retirement
- Window A/C
- ENERGY STAR Central A/C
- Air Source Heat Pump
- Ductless Mini-Split Heat Pump
- Programmable Thermostat
- Room Air Conditioner Early Replacement
- Room Air Conditioner Early Retirement/Recycling
- Low Flow Shower Head
- Faucet Aerators
- Clothes Washer
- Clothes Washer Early Replacement
- ENERGY STAR Air Purifier/Cleaner*

Commercial & Industrial

- General Purpose CFL Screw base, Retail-Commercial
- Occupancy Sensor - Wall-, Fixture-, or Remote-Mounted
- Daylight Dimming Control
- LED High-Bay Luminaires
- LED 1x4, 2x2, and 2x4 Luminaires
- Variable Frequency Drive (VFD) for HVAC
- Electric Chillers
- Dual Enthalpy Economizer
- ENERGY STAR Commercial Freezers*
- ENERGY STAR Commercial Refrigerators*



Mid-Atlantic TRM Version 5.0

Of particular importance is to note that the new Mid-Atlantic TRM Version 5.0 will soon be posted to our website this June (<http://www.neep.org/initiatives/emv-forum/forum-products>), where this version includes the addition of many new measures. Version 5.0 includes the following updates and added measures, where an asterisk indicates a measure added to this version of the TRM:

Residential

- Specialty CFLs
- Hardwired CFL Fixtures (Interior)
- Hardwired CFL Fixtures (Exterior)
- Solid State Lighting (LED) Recessed Downlight
- ENERGY STAR Integrated Screw Based Lamp
- ENERGY STAR Central CA
- Duct Sealing
- Air Source Heat Pump
- Ductless Mini-Split Heat Pump
- High Efficiency Gas Boiler
- High Efficiency Gas Water Heater
- Heat Pump Water Heater
- Clothes Washer
- Boiler Pipe Insulation*
- Boiler Reset Controls*
- Ground Source Heat Pump*
- High Efficiency Bathroom Exhaust Fan*
- ENERGY STAR Ceiling Fan*
- Thermostatic Restrictor Shower Valve*
- Water Heater Temperature Setback*
- Clothes Dryer*
- Dishwasher*

Commercial & Industrial

- General Purpose CFL Screw base, Retail - Commercial
- High Performance and Reduced Wattage T8 Lighting Equipment
- Solid State Lighting (LED) Recessed Downlight Luminaire
- Advanced Lighting Design - Commercial
- LED Outdoor Pole/Arm- or Wall-mounted Area and Roadway Lighting-Commercial
- LED High-Bay Luminaires
- LED 1x4, 2x2, and 2x4 Luminaires
- LED Parking Garage/Canopy Lighting - Commercial
- High Efficiency Unitary AC
- Variable Frequency Drive (VFD) for HVAC
- Electric Chillers
- Gas Boiler
- Gas Furnace
- C&I Heat Pump Water Heater
- LED Retrofit Kits for Pole/Arm- or Wall-Mounted Area and Roadway* Lighting - Commercial*
- LED Retrofit Kits for High-Bay Luminaires*
- LED Retrofit Kits for 1x4, 2x2, and 2x4 Luminaires*
- LED Retrofit Kits for Garage/Canopy Lighting - Commercial*
- LED Four-Foot Linear Replacement Lamps*
- ENERGY STAR Integrated Screw Based SSL (LED) Lamp*
- LED Flood and Spot Luminaires*
- LED Refrigeration Case Lighting*
- Air Conditioner Tune Up*
- Ductless Mini-Split Heat Pumps*
- Pre-rinse Spray Valves*
- Commercial Fryers*
- Commercial Steam Cookers*
- Commercial Hot Food Holding Cabinets*
- Commercial Griddles*
- Commercial Convection Ovens*
- Commercial Combination Ovens*
- Refrigerated Case Cover*
- Anti-Sweat Heater Controls*



Other Relevant Recent Forum Products. We also want to inform the Commission of the following Forum products which provide results from primary and secondary research in the region, in hopes that this information is useful to Pennsylvania stakeholders.

- Residential Electric Clothes Dryer Baseline Study (March 2015): This was primary research (metering of electric consumption patterns) on a small sample of households with clothes dryers less than five years old.
http://www.neep.org/sites/default/files/resources/NEEP_EMV_Summary%20Report_Dryer%20Baseline%20Finale%204-01-15.pdf
- Ductless Heat Pump Meta-Study (Nov 2014): This was secondary research reviewing results of relevant heat pump studies to date and interviewing manufacturers and installers of this technology. It identified both impact parameters and insights useful for program design.
http://www.neep.org/sites/default/files/products/NEEP-Ductless-Heat-Pump-Meta-Study-Report_11-13-14.pdf
- Incremental Cost Study Phase 3 (March 2014): Incremental costs for the following measures were developed: Unitary AC 65-135 kBh, residential heat pump water heater, LEED Refrigerator Case Lighting, Steam Traps, and C&I Air Source Heat Pumps
http://www.neep.org/sites/default/files/resources/NEEP%20ICS3%20Report%20FINAL%202014%20June%202014_0.pdf

Invitation for Future Regional Collaboration. Forum products benefit the Forum stakeholders by leveraging funds to meet information needs cost-effectively, as well as sharing and generating timely research results. Given that Pennsylvania shares borders, climate zones and market areas with some Forum states, and that Mid-Atlantic TRM elements are incorporated in the Pennsylvania TRM, we encourage Pennsylvania to explore opportunities for future collaboration on research and/or efforts related to future updates.

Conclusion

NEEP commends the Commission for its efforts in updating the PA TRM, and appreciate this opportunity to inform the Commission about the most updated Mid-Atlantic TRM version and also of recent Forum products that might prove useful as the Commission proceeds with the update process. We bring these updates to the Commission's attention given references to the Mid-Atlantic TRM throughout the PA TRM. We also note that NEEP would be open to collaborating with the Commission in the future on TRMs and/or on joint research that is of value regionally and leverages EM&V resources across states.

We hope these comments can assist the Commission in its efforts to ensure that energy efficiency savings are credible and based on reasonable assumptions, such that energy efficiency can help support a more affordable, reliable, cleaner and sustainable energy future for Pennsylvania.



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