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April 14, 2017

Dr. Talina Mathews
Executive Director
Kentucky Public Service Commission
211 Sower Blvd.
Frankfort, KY 40602-0615

Re: MEEA's Comments on Kentucky Public Service Commission Case No. 2017-00097

Dear Dr. Mathews:

The Midwest Energy Efficiency Alliance ("MEEA") submits these comments on the Kentucky Public Service Commission's ("PSC") investigation into the demand-side management ("DSM") programs and rates of Kentucky Power Company ("KPCO"), Case No. 2017-00097.

MEEA is a membership organization of state and local governments, energy utilities, research institutes, manufacturers, energy service providers and advocacy organizations working to advance energy efficiency in North Dakota, South Dakota, Kansas, Nebraska, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Indiana, Kentucky, Ohio, and Michigan. MEEA's members based in Kentucky include the East Kentucky Power Cooperative, Louisville Gas and Electric and Kentucky Utilities Company, the Kentucky Department for Energy Development and Independence, and the Mountain Association for Community Economic Development. More than 40 of MEEA's members work in the Commonwealth of Kentucky. MEEA serves as an information resource on energy efficiency policies and programs to help our members and other stakeholders identify, understand and implement cost-effective strategies that provide economic and environmental benefits. We work collaboratively with all stakeholders to support programs, policies, education and training initiatives and emerging technologies that have produced significant energy efficiency investment, energy and cost savings, economic growth, and enhanced environmental preservation across the Midwest. These comments illustrate the value of utility demand-side management investments in Kentucky. Specifically, these comments seek to show that:

1. Utility-administered DSM programs have a long and successful history in Kentucky;
2. Cost-effective DSM programs are necessary in order to mitigate increases to customer bills;
3. DSM programs create benefits for participants, for the utility system as a whole, and for the state, and;
4. Robust evaluation, measurement and verification (EM&V) practices can help ensure that DSM programs deliver benefits as planned.

Utility-administered DSM programs have a long and successful history in Kentucky

Utility-administered DSM programs have been approved and implemented in Kentucky for several decades, with at least one investor-owned utility in Kentucky implementing demand-side management programs since 1996.¹ An assessment of utility program portfolios in Kentucky conducted by the American Council for an Energy-Efficient Economy in 2012 found that Kentucky's utility-run energy efficiency programs "have performed reasonably well compared to other states", particularly given the absence of statutory or regulatory mandates requiring utilities to run energy efficiency programs. The same analysis also found that "recent utility DSM filings exhibit a continuing commitment to energy efficiency and utilities appear positioned for future investment in DSM programs." Indeed, estimated energy savings from utility-administered electric efficiency programs in Kentucky increased steadily through 2015 (see Figure 1, below). In 2015, utility energy efficiency programs in Kentucky achieved net incremental electric savings of 266,522 megawatt-hours (MWh) or 0.36% of retail sales, and net incremental gas savings of 4.30 MMTherms or 0.43% of retail sales. Cumulative first-year savings from utility-administered electric efficiency programs through the end of 2015 totaled approximately 1.7 terawatt-hours, or enough electricity to power more than 100 homes in Kentucky for a year.² (See Figure 2, below). According to the American Council for an Energy-Efficient Economy, each dollar invested in energy efficiency yields \$1.20 to \$4 in benefits.

¹ American Council for an Energy Efficient Economy, State and Local Policy Database, August 2015.

² Based on an average monthly residential energy consumption of 1130 kWh in Kentucky.

<http://www.electricitylocal.com/states/kentucky/>.

Figure 1: Estimated First-Year MWh Savings from Utility-Administered Electric Efficiency Programs in Kentucky.
Source: MEEA Tracking

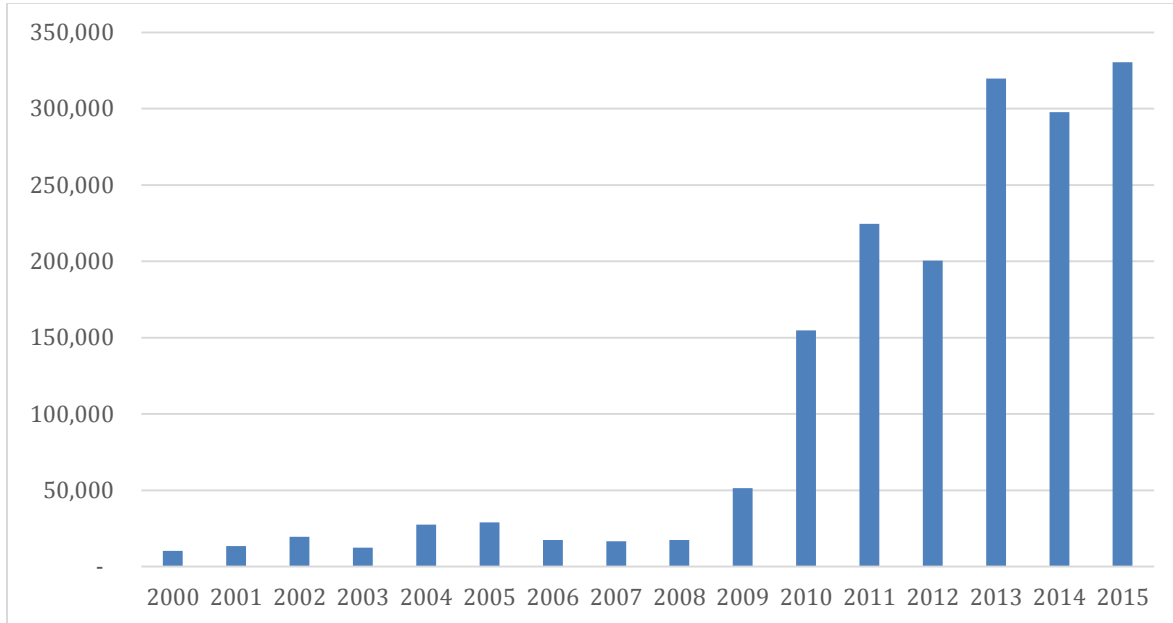
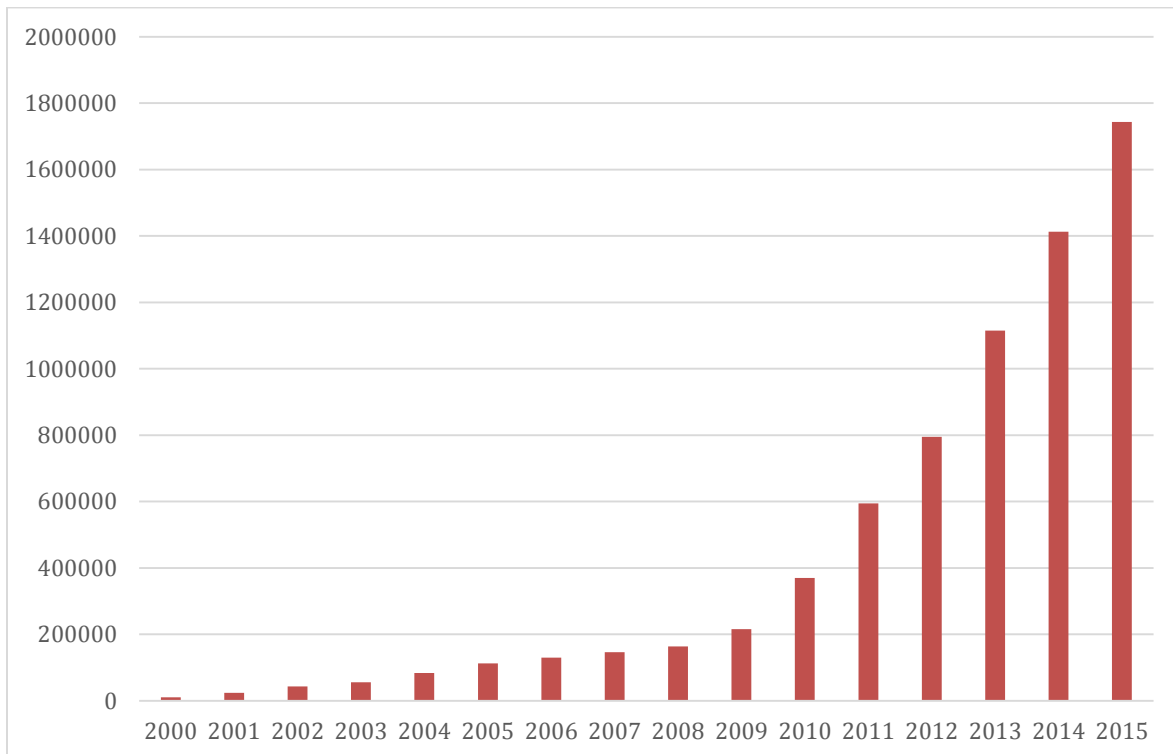


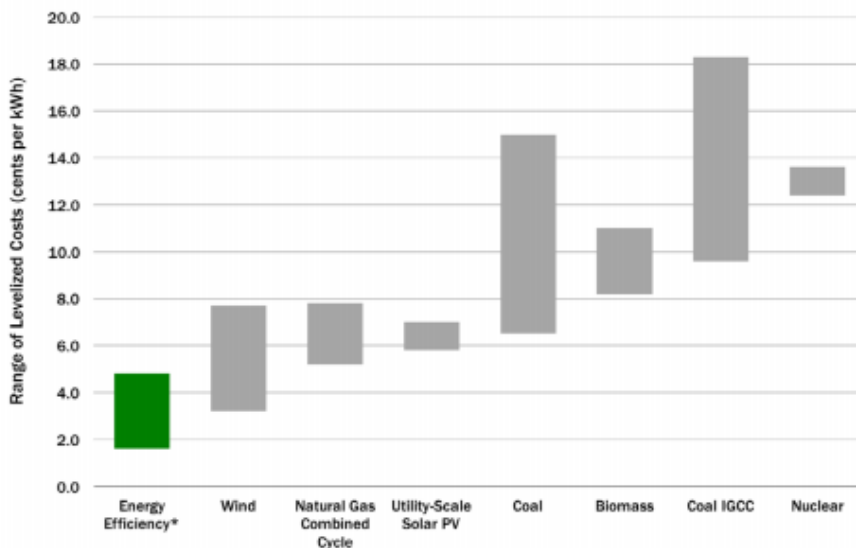
Figure 2: Estimated Cumulative First-Year MWh Savings from Utility-Administered Electric Efficiency Programs in Kentucky. Source: MEEA Tracking



Cost-effective demand-side management programs are necessary in order to mitigate increases to customer bills

While utilities bear the upfront cost of energy efficiency programs, in most cases, energy efficiency is the least-cost resource to meet energy demand. The average national levelized cost of saved energy from utility energy efficiency programs is \$0.028/kWh³, which is lower than the levelized cost of energy from supply-side generation resource options (See Figure 3, below). The average (\$0.014/kWh) and median (\$0.019/kWh) levelized cost of saved energy is lowest in the Midwest, with program administrators in the region reporting relatively low expenditures and relatively high savings.⁴

Figure 3: Range of Levelized Costs of Energy Resource Options. Source: American Council for an Energy-Efficient Economy



* Source: Energy efficiency program portfolio data from Molina, *The Best Value for America's Energy Dollar: A National Review of the Cost of Utility Energy Efficiency Programs* (Washington, DC: ACEEE, 2014) <http://aceee.org/research-report/u1402>. All other data from Lazard 2015. <https://www.lazard.com/media/2390/lazards-levelized-cost-of-energy-analysis-90.pdf>. High-end range of coal includes 90% carbon capture and compression.

³ Hoffman, et al. Lawrence Berkeley Laboratories, Electricity Markets and Policy Group. Trends in the Program Administrator Cost of Saving Electricity for Utility Customer-Funded Energy Efficiency Programs. January 2017.

⁴ Billingsley et al. Lawrence Berkeley Laboratories. The Program Administrator Cost of Energy Saved for Utility Customer-Funded Energy Efficiency Programs. March 2014.

By investing in the least-cost resource to meet energy demand, utilities avoid or delay costs associated with supplying that energy from more expensive investments in energy generation, transmission and distribution infrastructure. Utility DSM programs are therefore critical investments that mitigate increases in utility rates over time, resulting in long-term bill savings for all ratepayers.

The regulatory approval process for utility-administered DSM programs helps ensure that the costs associated with administering DSM programs are outweighed by benefits to ratepayers. When proposing DSM programs for PSC approval, regulated utilities in Kentucky must demonstrate that these programs will be cost-effective using the Total Resource Cost (TRC) test. Programs currently in Kentucky Power's DSM portfolio are cost-effective according to the utility's DSM plan filing with the commission in Case No. 2015-00271. These are not TRC scores from program evaluations – which are generally completed at the end of the plan cycle.

Program	TRC Score⁵
Residential Efficient Products	1.62
Appliance Recycling	1.04
New Manufactured Homes	1.54
Whole House Efficiency	1.35
Residential Home Performance	1.72
Targeted Energy Efficiency	1.06
Commercial Incentive Program	1.55
Express Install	1.01
New Construction	1.24

⁵ TRC Scores are from Kentucky Power Company's DSM Application filed in Case No. 2015-00271 before the Kentucky Public Service Commission, and included in Kentucky Power Company's Responses to Commission Staff's First Set of Data Requests, KPCO_R_KPSC_1_5_Attachment2, in Case No. 2017-0009.



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School Energy Manager	1.01
Retrocommissioning	1.13

DSM programs create benefits for participants, for the utility system as a whole, and for the state

Participants in DSM programs benefit from energy and demand savings. This can translate to lower energy bills, or slower increases in energy bills over time, depending on the particular circumstances of the utility serving those customers. All customers participating in DSM programs benefit from greater control over their energy bills.

DSM programs also generate a range of benefits beyond energy and demand savings. These benefits may accrue to program participants, to the utility system as a whole, and to the Commonwealth.⁶ Residential customers, for example, may benefit from improved indoor air quality, improved health and fewer lost days of work and school, improved comfort, water and wastewater bill savings, improved property values, improved aesthetics, and improved safety. Commercial and industrial customers may benefit from lower operating and maintenance costs and improved employee productivity and retention, while multifamily building owners may observe reduced tenant turnover.

Benefits to the utility system from DSM programs can include: reduced carrying costs on arrearages; reduced bad debt, reduced shutoffs and reconnections, fewer notices, calls and collection costs; savings on insurance premiums; reduced costs of ancillary services, improved power quality and reliability, reduced subsidy payments and lower transmission and distribution losses. By reducing the utility's revenue requirement, these non-energy benefits can accrue to customers (including customers who are not participating in DSM programs) in the form of milder increases to rates over time.

⁶ See Midwest Energy Efficiency Alliance, Non-Energy Benefits of Energy Efficiency. Available at: <http://www.mwalliance.org/sites/default/files/uploads/NEBs-Factsheet.pdf>.



Finally, sustained investment in DSM programs can deliver long-term economic development benefits to the Commonwealth.⁷ MEEA's regional analysis shows that energy efficiency investments by utilities in 2014 alone are estimated to create nearly 105,000 jobs, increase net regional income by almost \$8.8 billion, add over \$13.7 billion of total value to the region's economy, and generate about \$23 billion in net sales over 25 years in the Midwest. Sustained investment in DSM programs help energy efficiency businesses – the majority of which are small (1-5 employees)⁸ – hire employees, acquire new customers, and retain expertise. In contrast, the suspension or elimination of DSM programs threatens the stability of the energy efficiency industry and reduces the statewide economic benefits it generates, creating uncertainty for small energy efficiency businesses, and challenging utility relationships with trade allies.

Robust evaluation, measurement and verification (EM&V) practices can help ensure that DSM programs deliver benefits as planned

EM&V of KPCO's DSM Portfolio

EM&V refers to a set of studies and activities aimed at determining the effects of an energy efficiency program or portfolio; including data collection, monitoring and analysis associated with the calculation of energy and demand savings from individual sites or projects.⁹ EM&V can help policymakers and utilities ensure that ratepayer funds are being judiciously spent, and that DSM programs are delivering benefits as intended.

KPCO last completed a process, market and impact evaluation of its DSM programs in 2014, which covered years 2012-2013. KPCO's next evaluation is not scheduled to be filed until 2018. A process, market and impact evaluation of KPCO's DSM portfolio can help identify opportunities for program improvement; including whether key elements such as incentive levels, program delivery,

⁷ See Midwest Energy Efficiency Alliance and Cadmus. The Economic Impacts of Energy Efficiency Investments in the Midwest. October 2016. Available at: http://www.mwalliance.org/sites/default/files/uploads/MEEA_EconImpacts_FullReport_102816_FINAL.pdf.

⁸ Environmental Entrepreneurs. Energy Efficiency Jobs in America. December 2016. Available at: https://www.e2.org/wp-content/uploads/2016/12/EnergyEfficiencyJobsInAmerica_FINAL.pdf.

⁹ Schiller et al. Lawrence Berkeley Laboratories. National Energy Efficiency Evaluation, Measurement and Verification (EM&V) Standard: Scoping Study of Issues and Implementation Requirements. 2011.

program tracking mechanisms and quality assurance/quality control procedures are performing as designed – and should be conducted before the elimination or suspension of any of KPCO’s cost-effective DSM programs.

Value of a Statewide EM&V Framework

Utilities in Kentucky are not required to conduct EM&V by statute. Regulated utilities in Kentucky currently conduct EM&V at varying levels of rigor, and generally measure and report savings through their respective DSM programs according to their own practices and standards.¹⁰ In other words, the Commonwealth of Kentucky does not have a statewide “framework” – or a unified and uniformly-applied set of approaches and schedule – for the EM&V of DSM programs implemented by regulated utilities. Statewide EM&V frameworks in other states can consist of a variety of components, including but not limited to the following:

- Process, impact, and market evaluations conducted according to an agreed-upon schedule;
- Independent, third party evaluators;
- Establishment of stipulated or “deemed” energy and demand savings values for energy efficiency measures through development of a Technical Reference Manual (TRM)¹¹;
- Periodic project-based measurement and verification, and/or large-scale consumption data analysis to complement the use of deemed savings values;
- Stakeholder participation via a statewide DSM collaborative;

¹⁰ See Midwest Energy Efficiency Alliance (MEEA). Considerations for a Statewide Evaluation, Measurement and Verification Framework for Energy Efficiency in Kentucky. October 2015.

¹¹ For a review of the development, use and maintenance of statewide Technical Reference Manuals in the Midwest, see Midwest Energy Efficiency Alliance, Midwest TRM Inventory. February 2017. Available at: http://www.mwalliance.org/sites/default/files/uploads/MEEA_2017_Midwest-TRM-Inventory_v1.0_Feb2017.pdf. In August 2016, stakeholders in Kentucky – including the PSC – developed a “Kentucky TRM Roadmap”, which reflects and documents stakeholder input around the principles that would guide the development, use and maintenance of a statewide TRM and would accompany a statewide TRM as a standalone document, if stakeholders elect to develop a statewide TRM in the future. That Roadmap is available at: <http://www.mwalliance.org/sites/default/files/uploads/Kentucky%20TRM%20Roadmap%20and%20Cover%20Memorandum.pdf>.



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The lack of a statewide EM&V framework makes it difficult for program administrators to evaluate and improve program performance and for regulators to ensure that ratepayer dollars are being judiciously spent.¹² A statewide EM&V framework can bring a level of rigor and scrutiny to the energy efficiency industry, ensuring that savings, as well as non-energy benefits are realized and achieved in a cost-effective manner. It can help minimize risk from the energy efficiency program planning process, allowing for greater programmatic innovation with the potential to reach more utility customers. As such, utilities, consumers, and regulatory agencies stand to benefit from a more uniform approach to EM&V.

Thank you for this opportunity to comment on the case before the Commission and we look forward to working with you, the Commission, the utilities and all other stakeholders to support energy efficiency as a valued resource in the state. If you need additional information or have any questions about these comments, please contact Julia Friedman, MEEA's Senior Policy Manager at jfriedman@mwalliance.org, or Nikhil Vijaykar, MEEA's Senior Policy Associate at nvijaykar@mwalliance.org.

Sincerely,

Stacey Paradis, Executive Director
Midwest Energy Efficiency Alliance

¹² MEEA 2015.