

April 27, 2020

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120
Re: Docket # M-2020-3015228

Dear Secretary Chiavetta,

The Keystone Energy Efficiency Alliance (KEEA) is pleased to submit the following comments regarding the Tentative Implementation Order for Phase IV of Act 129 Energy Efficiency and Conservation Programs. We appreciate the opportunity to comment on this important issue.

Sincerely,

A handwritten signature in black ink, appearing to read 'Julian Boggs', with a stylized, cursive script.

Julian Boggs
Policy Director
Keystone Energy Efficiency Alliance

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Act 129 Energy Efficiency & Conservation Program Phase IV Tentative Implementation Order
Docket # M-2020-3015228

COMMENTS OF THE
KEYSTONE ENERGY EFFICIENCY ALLIANCE
TO THE TENTATIVE IMPLEMENTATION ORDER REGARDING PHASE IV OF ENERGY EFFICIENCY
AND CONSERVATION PROGRAMS UNDER ACT 129

INTRODUCTION

The Keystone Energy Efficiency Alliance (KEEA) is Pennsylvania's trade association for the energy efficiency industry. Our membership, comprised of seventy companies, ranges from small local firms to large multinational corporations and operates across the value chain of energy efficiency. We engage our membership and key policymakers in support of an industry that accounts for more than 71,000 Pennsylvania jobs. The policy we promote at the state and local level expands the market for energy efficiency.

KEEA thanks the Commission for the opportunity to comment on the Phase IV Tentative Implementation Order. KEEA strongly supports the Commission's finding that a Phase IV is in the public interest. In these comments, we make recommendations for Phase IV programs in order to maximize energy savings, economic development, improved health, and many other lasting benefits that Act 129 delivers.

Table of Contents

[Section I: Impact of the COVID-19 Pandemic on Act 129 Implementation](#)

[Section II: Cost of Energy Efficiency and Conservation Plans](#)

[Section III: Maximizing Energy Efficiency Investment and Customer Benefits](#)

[Section IV: Balancing Long-lived and Short-lived Measures in EDC Plans](#)

[Section V: Accumulating Savings in Excess of Reduction Requirements](#)

[Section VI: Standards to Ensure Savings Are Available to All Customers](#)

[Section VII: Bidding Energy Efficiency Resources into the PJM Capacity Market](#)

[Section VIII: Fuel-switching Policy](#)

[Conclusion](#)

[Appendix](#)

SECTION I: IMPACT OF THE COVID-19 PANDEMIC ON ACT 129 IMPLEMENTATION

The Commission should initiate a proceeding to develop best practices and program adjustments for the implementation of Phase III programs in response to the COVID-19 pandemic.

Act 129 was signed into law in October 2008, a month after the Lehman Brothers collapse that triggered the Great Recession. In 2009, electricity demand collapsed as economic activity stagnated¹. Despite this challenging environment, energy efficiency was a bright spot in the recovery, creating tens of thousands of jobs, driving rapid innovation with LED lighting technology, and delivering \$4 billion in benefits to Pennsylvania electric customers through Phase I of Act 129 [Phase I Final Report at 16].

¹ State Electricity Profile: Pennsylvania, U.S. Energy Information Administration, 2019, available at <https://www.eia.gov/state/>

This history serves as a reminder of the important role energy efficiency can play in recovering from the grave situation we face today. Energy efficiency employment has grown 20 percent over the past five years² and accounted for 71,000 Pennsylvania jobs in 2019³. Energy efficiency can help households and businesses reduce energy costs in an uncertain economic future, and put tens of thousands of Pennsylvanians to work installing the next generation of energy efficiency measures.

At the same time, the energy efficiency industry has not been spared from the economic devastation of the COVID-19 pandemic. A recent report by E2 and E4theFuture found that the energy efficiency industry lost 69,800 jobs in March.⁴ Anecdotally, KEEA member companies in the residential and small business sector have been the hardest hit, with layoffs, furloughs, and reduced hours reaching 75 to 100 percent of employees.

Despite these challenges, the energy efficiency industry continues to find creative ways to deliver energy efficiency savings to customers during this critical time. Behavioral programs that use science-based techniques to encourage conservation are delivering real energy savings as Pennsylvanians consume more energy at home. Energy efficiency vendors are using online marketplaces, virtual audits, and multi-channel marketing to build pipelines of customers to ramp up energy efficiency projects when on-site work resumes. Design, engineering, and project development for large commercial and industrial projects continues as engineers and energy experts work from home.

Multiple states have already taken action to support energy efficiency programs in response to COVID-19. The Connecticut Department of Energy and Environmental Protection (DEEP) issued a determination approving utilities programs to support the energy efficiency workforce

² 2020 US Energy & Employment Report, NASEO and Energy Futures Initiative, Five Year Trends, available at <https://www.usenergyjobs.org/2020-state-reports>

³ 2020 US Energy & Employment Report, NASEO and Energy Futures Initiative, Pennsylvania Report, available at <https://www.usenergyjobs.org/2020-state-reports>

⁴ Clean Energy Employment: Initial Impacts from COVID-19 Economic Crisis, E2 and E4theFuture, available at <https://e2.org/reports/clean-jobs-covid-economic-crisis-march-2020/>

through virtual trainings and advance partial payments to vendors⁵. The New York State Energy Research and Development Authority (NYSERDA) issued a letter on April 23 making a number of modifications to energy efficiency programs, including advance payments to vendors, virtual measurement & verification procedures, and extensions to program deadlines⁶.

Considering the substantial disruption COVID-19 has posed to energy efficiency programs, and the anticipated ongoing impacts on the energy efficiency and construction industries, KEEA recommends that the Commission convene EDCs, energy efficiency vendors, and other interested stakeholders to share and deploy best practices for implementing Phase III energy efficiency programs in the new and ever-changing environment.

SECTION II: COST OF ENERGY EFFICIENCY AND CONSERVATION PLANS

KEEA recommends updating the calculation for the “total cost of any plan” to adjust for inflation and significant changes in costs since the budgets were first calculated in 2009.

Act 129 states “[t]he total cost of any plan must not exceed two percent of the EDC’s total annual revenue as of December 31, 2006, excluding Low Income Usage Reduction Programs established under 52 Pa. Code § 58 (relating to residential Low-Income Usage Reduction Programs)” [66 Pa. C.S. § 2806.1(g)]. In its initial Implementation Order, the Commission directed each EDC to calculate its own budget, and stakeholders disagreed as to which revenues should be included (specifically whether competitive electric generating supplier sales in Duquesne Light Company’s territory should count), and whether the cap should apply to the span of a year or a phase [Phase I Implementation Order]. That is to say, even though the budget is established by legislation, it required interpretation by the Commission.

If budgets are not adjusted for inflation, Act 129 will not produce the intended level of savings or benefits expected when passed. To provide a sense of scale, one would need approximately

⁵ Initial Action Items: COVID-19 Contingency Planning in the 2019-2021 Conservation and Load Management Plan, DEEP,

⁶ COVID Response Letter, Case No. 18-M-0084, NYSERDA, available at <http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?Mattercaseno=18-M-0084>

\$1.25 today to achieve the purchasing power \$1 provided in 2006, due to the inflationary rise in prices of goods and services over time. Inflation adjustments are important to ensure the consistency of the budgets established in the initial Act 129 legislation.

KEEA proposes adjusting the Phase IV budgets to account for inflation as shown in [Table 1](#), which compares the initial budgets to the inflation-adjusted budgets. This would result in a statewide Phase IV budget of \$1.53 billion, an increase of roughly \$300 million over the proposed budget of \$1.22 billion. KEEA relied on a gross domestic product (“GDP”) implicit price deflator sourced from the United States Federal Reserve⁷ to adjust for inflation.

Utilizing a GDP price deflator is a reasonable approach because it measures changes in the value of all goods and services in the economy, rather than specific goods or services. Energy efficiency programs cover many parts of the economy, requiring a more holistic approach than a simple Consumer Price Index (the price of a basket of consumer goods) or other inflation adjustments.

The additional budget will allow the EDCs to achieve 25% higher energy savings and deliver additional net customer benefit. This is supported by the fact that the Potential Study found significant cost-effective energy efficiency potential beyond what is achievable with the unadjusted budgets, at similar cost [Potential Study at 23]. [Table 2](#) shows KEEA proposed savings targets for each utility based on the adjusted budget and utility-specific acquisition cost found in the Potential Study [Potential Study at 3].

KEEA recommends the Commission adopt the budgets and savings targets in [Tables 1](#) and [2](#) for Phase IV of Act 129 in order to better reflect actual costs and deliver the levels of real savings and benefits intended for Act 129.

⁷ Federal Reserve Economic Data, available at <https://fred.stlouisfed.org/>

SECTION III: MAXIMIZING ENERGY EFFICIENCY INVESTMENT AND CUSTOMER BENEFITS

KEEA proposes that in order to maximize customer benefit under the legislative framework provided by Act 129, the Commission should ensure that utilities continue to invest in energy efficiency programs after savings targets have been met as long as it is cost-effective to do so. Furthermore, KEEA recommends that the Commission require each utility to submit plans to invest all excess budget into supplementary energy efficiency programs.

Savings Targets Alone Will Not Maximize Customer Benefit

KEEA accepts the acquisition costs in the Phase IV Potential Study, though we assert that they likely overestimate the true acquisition costs in Pennsylvania and therefore underestimate the savings that can be achieved within Act 129 budget constraints. As Commissioner Place noted in his Statement, savings targets are wholly a function of the projected acquisition costs of first year savings and Act 129 budgets, and actual acquisition costs to date have been significantly lower than projected. Meanwhile, the SWE has calculated a significantly higher acquisition cost for Phase IV (\$278/MWh) than was used in the Phase III Implementation Order (\$184/MWh). While the loss of LED lighting as a dominant measure, particularly in the residential sector, may account for some of the projected increase, the projected spike in costs persists even when controlling for lighting. According to an analysis provided to KEEA by GDS Associates, the projected acquisition costs for Phase IV residential non-low income are 81 percent higher than non-lighting, non-low income acquisition costs in the first three years of Phase III [\[Table 3\]](#).

Regardless, KEEA understands the Commission's reasoning for erring on the side of caution and proposing savings targets that EDCs are reasonably certain to be able to meet within their 2 percent budget. Because the Commission is required to issue a minimum \$1,000,000 penalty if an EDC misses its target by any amount [66 Pa.C.S. § 2806.1(f)(2)(i)], overly-ambitious savings targets risk penalizing EDCs even if a good faith effort has been made.

An additional downside of ambitious savings targets is that they may inadvertently drive EDCs towards a measure mix that prioritizes lower cost first-year savings (typically with shorter measure lives) over higher-cost first-year savings (typically deeper measures with longer measure lives). The combination of strict savings targets, a firm budget cap, and steep

mandatory penalties has historically led EDCs, when implementing the programs in the field, to prioritize measures that deliver the lowest possible cost first-year savings in order to avoid the penalty at lowest possible cost. For example, lighting and home energy reports (HERs) represent more than 80 percent of all savings over the first three years of Phase III, [\[Table 4\]](#), despite the Phase III Potential Study projecting that these measures represented just 41 percent of base achievable energy efficiency [\[Table 5\]](#) for Phase III.

Measures that deliver low-cost first-year savings like HERs have important attributes such as broad participation rates among customers and should remain part of the measure mix. However, a single-minded focus on these measures diverts resources from investment in long-lived measures that provide important benefits and deliver sustained value for Pennsylvania electric customers, including non-energy benefits like improved indoor air quality and housing affordability.

The Tentative Order anticipates that in place of lighting measures, EDCs will meet savings targets through comprehensive whole-home measures and other longer-lived measures. Chairman Brown Dutrieuille, in her Statement, declares that the “Tentative Order proposes that utilities design plans which provide more focus on comprehensive energy efficiency measures. This concept is a natural evolution from simple measures such as lighting to all-encompassing measures such as updating HVAC, weatherization, and water heating for a building.” We strongly applaud this sentiment. However, the Order itself does not provide mechanisms to ensure that EDCs invest in the long-lived measures that the Chairman describes. Past experience tells us that absent a policy change, EDCs during implementation will continue to prioritize measures that deliver low-cost first-year savings at the expense of the long-lived measures that the Order anticipates. Additional steps are needed to ensure that the Chairman’s goals are realized. If the Commission allows the much higher acquisition costs set forth in the Tentative Implementation Order, then the Commission should also ensure that the comprehensive long-lived measures are installed.

EDCs Should Be Required to Invest Their Full Budgets in Energy Efficiency to Maximize Customer Benefit

The concept that utilities should exceed their targets to maximize cost-effective investment in energy efficiency under the 2 percent budget cap is well established. Act 129 states “The commission shall conduct a public hearing on each plan and allow for the submission of recommendations by the Office of Consumer Advocate and the Office of Small Business Advocate and by members of the public as to how the electric distribution company could improve its plan or exceed the required reductions in consumption” [66 Pa.C.S. § 2806.1(e)(1)]. In its Phase II Implementation Order, the Commission stated, “Our goal is not to just require achievement of minimum targets. Pennsylvania EDCs are not to stop spending their program budgets when they achieve their savings target within a phase, but rather are to seek out additional, cost-effective measures to implement.” [Phase II Final Implementation Order at 26.]. However, at the end of Phase II, utilities had not spent \$137M, or 19 percent, of available Act 129 budgets [Table 6]. Indeed, in its Phase IV Tentative Implementation Order, the Commission has already put in place a policy intended to encourage EDCs to continue invest in energy efficiency after savings targets are met by allowing EDCs to carry over the full value of savings generated in one phase to the next [Tentative Order at 22].

However, the Commission’s efforts thus far to encourage EDCs to maximize energy efficiency investments have not yet delivered the full benefit of energy efficiency programs allowed under the budget cap. During Program Years 2-10 of Act 129 (excluding year 1 as utilities were scaling programs for the first time), utilities spent just 80% of their budgets, leaving \$388M unspent [Table 6]. That unspent budget represents billions in TRC benefits that were not captured by customers.

Working against the Commission’s efforts is a significant financial disincentive for the EDCs to continue investing in energy efficiency programs after required reductions in consumption are met, since such expenditures erode electricity sales revenue and deliver a lower rate of return than capital investments⁸. In the absence of alternative ratemaking mechanisms that resolve

⁸ Beyond Carrots for Utilities: A National Review of Performance Incentives for Energy Efficiency, American Council for an Energy Efficient Economy, 2015, available at <https://www.aceee.org/research-report/u1504>

this financial disincentive, the Commission must take stronger action to ensure that Act 129 budgets are fully utilized to deliver the maximum customer benefit.

Therefore, the Commission should not only request, but require that EDCs invest their entire 2 percent budget into energy efficiency programs in order to maximize the customer benefit of Act 129.

Investment of Excess Budgets in Cost-Effective Energy Efficiency Will Produce Greater Benefit Than Customer Refunds

In proposing additional reductions in consumption through a Phase IV of Act 129, the Commission finds that EDC investment in energy efficiency can deliver greater benefit to electric customers than the cost of those programs [Tentative Order at 13]. Moreover, the Commission finds that “it would be more beneficial to all parties, including ratepayers, for the EDCs to be allowed to spend Phase III budgets to attain savings in excess of compliance targets...” [Tentative Order at 69]. An extension of this logic finds that the more benefit to electric customers will occur if EDCs invest one hundred percent of their annual spending limits into energy efficiency programs rather than refunds as long as the total investment is cost-effective. The Potential Study finds energy efficiency investment up to and beyond the budget cap to be cost-effective. The SWE notes that “because the model results were in a budget-constrained framework, significant efficiency savings were available at similar costs beyond those obtainable within the budget constraints” [Potential Study at 23]. Thus, refunding excess budgets to ratepayers rather than directing EDCs to invest further in energy efficiency would deny Pennsylvania electric customers significant benefits.

The Commission states, “We do not believe it to be sound policy to continue spending Phase III budgets in Phase IV on Phase IV plan implementation when those monies could be refunded back to the appropriate rate classes.” KEEA agrees that Phase III budgets should not be spent on Phase IV implementation, as that would merely serve to undermine investments and savings that would otherwise be generated in Phase IV using Phase IV budgets. However, the notion that customers are better served through refunds than by additional investments in energy efficiency flies in the face of the Commission’s continued finding, discussed here at length, that

investments in energy efficiency in excess of minimum savings targets are to the benefit of electric customers. Instead, below we propose an alternative mechanism by which excess budgets are invested in supplementary energy efficiency programs.

The Commission Should Require That Excess Budgets Be Used for Supplementary Energy Efficiency Programs

Even with a clear requirement from the Commission to spend their budgets in full, it is likely and reasonable that EDCs may continue to hold excess budgets at the end of the Phase due to the difficulty of precisely calibrating programs to approach but not exceed budget caps. In order to utilize these funds so as to not confuse implementation or compliance in the subsequent phase, KEEA proposes that excess budgets be invested into supplementary programs or pilot programs using strategies that are not employed in core Phase III or Phase IV implementation plans. Such strategies could include market transformation, financing, or education. EDCs should include accounting mechanisms in their implementation plans to ensure that supplementary programs are budgeted and evaluated separately from core programs.

Supplementary programs should not be required to meet specific savings targets, since their exact budgets would not be known until the conclusion of each phase. However, the plan for supplementary programs could be developed, proposed, and approved using estimates based on each EDC's projected excess budget. Upon the completion of EDC accounting for each Phase, the budgets for ensuing supplementary programs would be finalized and spent down.

KEEA welcomes alternative perspectives on the appropriate mechanism by which EDCs should spend down their entire budgets, and we encourage the Commission to convene stakeholders to further develop recommendations on the design of supplementary programs. However, the benefits of utilizing the full cost-effective budget are clear and the Commission should direct EDCs to do so in its Final Implementation Order.

Alternative Ratemaking Mechanisms Can Motivate EDCs to Maximize Benefits Under Act 129

KEEA maintains that the most effective tools to improve utility performance and deliver maximum benefits from Act 129 budgets are alternative ratemaking mechanisms, including performance incentives and full revenue decoupling, which allow EDCs to share in a portion of the considerable value that energy efficiency programs deliver to customers. We have discussed these policies at length in our comments on Alternative Ratemaking Methodologies, Docket No. M-2015-2518883. However, we understand that the Commission will not consider alternative ratemaking mechanisms in this proceeding, and look forward to EDC proposals in rate cases that include these mechanisms.

SECTION IV: BALANCING LONG-LIVED AND SHORT-LIVED MEASURES IN EDC PLANS

The Commission should direct EDCs to submit plans that have an average expected useful life (EUL) of measures within a target range, and that include strategies that leverage short-lived measures to maximize the benefit of longer-lived measures.

As stated in Section III, KEEA wholeheartedly agrees with Chairman Brown Dutrieuille that EDC plans should evolve from simple measures like lighting to all-encompassing measures such as updates to HVAC, weatherization, and water heating. We believe that, to allow for investments in long-lived measures, it is necessary for EDCs to invest their entire Act 129 budgets into energy efficiency beyond minimum savings targets.

However additional actions are necessary to ensure utility plans include a balanced mix of measures, including short-lived measures like HERs, which enjoy broad or universal participation, and long-lived measures such as HVAC upgrades and weatherization, which deliver long-term savings and significant non-energy benefits. As demonstrated in Tables [4](#) and [5](#), EDCs have historically overinvested in short-lived measures with low first-year savings costs compared to potential, and conversely underinvested in long-lived measures with higher first-year savings costs compared to potential.

A balanced portfolio can also provide synergies that maximize the advantages of short-lived and long-lived measures. These measures can interact with each other to provide additional benefit. For instance, HERs can use behavioral science to target and promote specific measures in

addition to providing energy-saving behavioral tips for the home. In practice, programs promoted within a HER have a 32% increase in participation over control groups.⁹

KEEA recommends that the Commission provide the following guidance to EDCs to help them maintain portfolios balanced between short-lived measures (e.g. HERs) and long-lived measures (e.g. home retrofits):

1. Require each EDC's Phase IV portfolio of measures for each class to include an average expected useful life (EUL) that represents a balance between the potential study (i.e. a higher proportion of long-lived measures) and Phase III actuals (higher proportion of short-lived measures). The Commission should direct the SWE to calculate a range of average EUL that spans the midpoint of historic average EUL to date (representing the low end of the range) and the average EUL of the Phase IV Potential study (representing the high end of the range). Providing this range will give EDCs flexibility to develop plans appropriate to their service territories, customer types, and historic programming, but ensure that they include a larger share of longer-lived measures than they have historically.
2. Direct EDCs to incorporate into their Phase IV plans the kind of short-lived measure programs that prompt the adoption of long-lived measure programs (e.g. HERS, which provide demonstrable uplift to long-lived measure programs). Such strategies could fit well into the Commission's requirement for one "comprehensive program" or whole-building programs.

SECTION V: ACCUMULATING SAVINGS IN EXCESS OF REDUCTION REQUIREMENTS

KEEA recommends that 50 percent of carryover savings be counted toward the next phase in order to prevent carryover from displacing new investment while maintaining an incentive for overperformance.

⁹ Personal communication, Opower.

KEEA appreciates the Commission's reasoning that allowing carryover provides utilities an incentive to continue running programs after the target is met and helps prevent programs going dark [Tentative Order at 23]. Stopping and starting programs is indeed harmful to energy efficiency vendors and subcontractors, and confusing for customers.

However, the carryover policy has had limited effectiveness in motivating EDCs to continue energy efficiency investment beyond the mandatory savings targets. This is evidenced by the roughly 20 percent of EDCs' budget cap that was unspent over the first ten years of Act 129 [Table 6]. The benefits of the allowing carryover in order to motivate EDCs to exceed their targets should be weighed against the costs of the potentially reduced savings achieved in the subsequent phase. As Commissioner Place noted in his Statement, the current policy of allowing all savings to carry over threatens to overwhelm new savings requirements of several EDCs for Phase IV.

KEEA recommends that the Commission allow only fifty percent of savings to carry over into the next phase in order to balance these costs and benefits. EDCs would continue to receive motivation from carryover to deliver savings in excess of the minimum requirement, but that carryover would be less likely to displace savings in a subsequent phase.

The best way to incentivize EDCs is through alternative ratemaking proposals that better align utility earnings with customer value, including energy efficiency savings. As noted previously, KEEA looks forward to EDC proposals in rate cases that include performance incentive mechanisms and full revenue decoupling. We believe that financial earnings opportunities will provide a much more effective motivator for utilities to exceed minimum savings targets than savings carryover, without sacrificing future savings.

SECTION VI. STANDARDS TO ENSURE SAVINGS ARE AVAILABLE TO ALL CUSTOMERS

KEEA recommends that the Commission take steps to ensure that specific sectors receive attention and investment in utility plans. Specifically, we recommend that the Commission (1) require EDCs to devote an amount of their budgets to multifamily housing that is at a minimum proportionate to the multifamily housing energy consumption in their

respective service territories; (2) create a Working Group to develop recommendations for upgrading local government street lighting; and (3) set non-binding targets and benchmarking requirements for each EDC to upgrade 50 percent of the local government street lights in its service territory in Phase IV.

KEEA agrees with the Commission that the GNI sector as a whole does not have a higher than average acquisition cost of first-year savings, and that a carveout for the entire sector, which includes large universities and nonprofit hospitals, is not necessary [Tentative Order at 20]. However, other customer subsectors do not receive investment and savings proportionate to their energy demand or their need, and thus would benefit from the special treatment that GNI received in the first three phases of Act 129. Act 129 states the program should contain “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.” This is why we recommend that both multifamily housing and local government street lighting be the subjects of specific standards.

Multifamily Housing Can Achieve Significant Savings with Additional Attention and Resources

Many multifamily buildings, including those serving low-income Pennsylvanians, are privately owned and would not fall under the GNI designation. However, the Commission need not limit itself to that designation when setting specific carveouts for subsectors. Act 129 directs the Commission to “adopt additional required reductions in reduction in consumption,” giving the Commission discretion to determine how those requirements apply [66 Pa. C.S. § 2806.1(c)(3)]. Indeed, the Commission is using that discretion by electing not to apply a GNI sector target.

Multifamily buildings present unique challenges for energy efficiency programs. Chief among these is the split incentive that occurs in master metered buildings when property owners are responsible for the building and its energy systems but residents are responsible for their own energy bills. Additionally, whole-building measures such as HVAC and water heating improvements tend to be large-scale projects for multifamily buildings and take significant planning and investment. This scale makes investment especially difficult when EDCs are focused on achieving savings at the lowest first-year cost, as discussed in Sections II and III.

The performance of multifamily programs in Act 129 is difficult to measure, because expenditures and savings are not uniformly reported and several EDCs include multifamily measures in broader residential programs. However, evidence suggests that multifamily housing is underserved. Duquesne, one of the few EDCs that reports its multifamily measures independently, reports that its Multifamily Retrofit program represents only 0.1% of residential program savings in the first three years of Phase III [Duquesne PY10 Final Report at 15] despite the Phase III Potential Study finding that multifamily housing represents 11.8% of potential residential savings [Phase III Potential Study at 28].

While underserved, multifamily housing has significant opportunity for energy efficiency upgrades and deep savings. The Market Potential Study identified “whole building” as the single biggest opportunity for incremental savings in the residential sector [Potential Study at 29], with Multifamily representing a combined 9% of the residential program potential by building type [Potential Study at 28]. Indeed, we believe this sector-specific potential is understated. If utilities are enabled and encouraged to shift focus to larger, more complex measures with longer-term expected lifetimes, such as boiler upgrades and replacements, envelope and in-unit measures, and even whole-building electrification where feasible, the savings could easily surpass 9%.

Successful programs operated in neighboring states, such as NYSERDA’s Multifamily Performance Program, demonstrate that market actors are ready and able to address the challenges posed by multifamily buildings. Setting targets for EDC investments in the multifamily housing subsector will allow Pennsylvania to achieve similar results. Establishing a budget requirement rather than a savings requirement will prevent EDCs from being overly focused on measures with the lowest first-year costs. The Commission should set a target for each EDC to allocate Act 129 budgets to multifamily housing proportionate to the multifamily potential for the EDC.

Local Government Street Lighting Upgrades Face Unique Barriers

Local government street lighting is not currently being served by energy efficiency programs in proportion to its potential. Despite the fact that LED lighting costs have plummeted in recent

years, and that the Guaranteed Energy Savings Act (GESA) provides opportunities for local governments to finance energy retrofits including street lighting, many barriers remain for local governments to upgrade their street lighting and realize significant cost savings. Municipal-level cost savings will be particularly critical as the economic impacts of COVID-19 create significant financial hardships for local governments.

A 2015 study by the Northeast Energy Efficiency Partnerships (NEEP) found 329 GWh in potential annual energy savings for Pennsylvania and further identified a number of barriers to achieving those savings¹⁰. Chief among these obstacles are utility ownership of the lighting equipment and LED tariff structures that do not allow customers to capture the true value of energy reductions.

Energy efficiency and conservation plans may not be able to fully resolve every barrier identified in the NEEP study; for instance, they cannot empower local governments to purchase street lighting at a fair price. Given the complexity the tariff and ownership models involved, the Commission should create a Working Group consisting of EDCs, representatives of a diversity of local governments, and other interested stakeholders to produce recommendations that will increase the adoption of LED street lighting by local governments.

However, the Commission can achieve additional reductions in municipal street lighting consumption consistent with the goals of Act 129 by setting requirements for EDCs. Currently, EDCs have little incentive to upgrade local government street lighting as part of their plans because it represents an important source of revenue. The city of Erie reports spending over \$1 million annually on street lighting¹¹, and PPL Electric has earned \$24 million annually from its municipal customers¹².

¹⁰ LED Street Lighting Assessment and Strategies for the Northeast and Mid-Atlantic, Northeast Energy Efficiency Partnerships, 2015, <https://neep.org/led-street-lighting-assessment-and-strategies-northeast-and-mid-atlantic>

¹¹ Personal communication, City of Erie staff

¹² PPL pulls streetlight switcheroo on municipalities, The Morning Call, 2016, available at <https://www.mcall.com/news/local/mc-ppl-streetlights-taxes-20160123-story.html>

KEEA recommends that the Commission set targets for each EDC to upgrade a proportion of LED streetlights within its service territory. In its study, NEEP recommended that jurisdictions set a goal to upgrade 30 percent of local government lighting to LED by 2020. Given that some progress has been made since 2015, we recommend a target of 40 percent by 2025. A thorough review of streetlight potential and current progress by the Statewide Evaluator would better inform a specific target.

Alternative Ratemaking Designs Are the Most Effective Strategy to Improve Performance for Multifamily Housing and Local Government Street Lighting

KEEA believes that an alternative ratemaking mechanism is the most comprehensive strategy to achieve improvements in utility energy efficiency program performance for multifamily housing and local government street lighting. We look forward to EDC proposals in rate cases featuring performance incentives that enable utilities to capture a portion of the net benefit delivered to customers through excellent multifamily and local government street lighting programs.

SECTION VII: BIDDING ENERGY EFFICIENCY RESOURCES INTO THE PJM CAPACITY MARKET

EDCs should not be required to bid energy efficiency capacity from C&I customers into the PJM capacity market because there are already successfully operating programs from third party implementers in the state. If EDCs are successful in bidding residential energy efficiency into PJM, revenues should be invested in supplementary residential energy efficiency programs.

KEEA opposes requiring EDCs to bid energy efficiency capacity from commercial and industrial (C&I) projects into the PJM market. Bidding energy efficiency into the PJM Market is complex, with risks and rewards that must be balanced. Pennsylvania already has numerous qualified C&I participants implementing PJM programs and to the extent that economic opportunities exist in this market, these parties have identified and will continue to identify these opportunities at a lower cost and risk to ratepayers than EDCs. These current market participants have already absorbed upfront costs and risks to ratepayers, and programs have excelled in a challenging and unique regulatory environment.

In the event that the Commission decides to require utilities to bid C&I energy efficiency into PJM, KEEA does not believe it will maximize customer benefit to refund revenues from those bids to all ratepayers. Instead, those revenues should be invested in supplementary energy efficiency programs that benefit C&I customers, and they should not be subject to the 2 percent budget cap as they are not recovered from ratepayers.

Residential energy efficiency does not currently experience the same market participation, in part due to the challenge of developing a value proposition for energy efficiency capacity from aggregated residential customers. It is possible that EDCs are uniquely positioned to take advantage of this market opportunity and identify additional value from bidding residential energy efficiency into PJM capacity markets. If so, customers would receive more benefits from the investment of that revenue in supplementary energy efficiency programs above what is allowed under the Act 129 budgets. Doing so would provide more benefit for customers, as the Potential Study has found significant achievable energy efficiency potential beyond what is achievable under the 2 percent budget cap [Potential Study at 23].

SECTION VIII: FUEL-SWITCHING POLICY

KEEA recommends the Commission revisit its treatment of fuel-switching because it encourages electric-to-fossil fuel conversion even in circumstances when there is no total energy efficiency improvement, which is not an appropriate use of limited Act 129 dollars.

Energy efficiency can help accomplish a variety of public policy goals for the Commonwealth, including economic development, energy affordability, reduction of greenhouse gases and other air pollution, improved occupant health, and increased comfort using a variety of fuel sources. Policymakers need not specify the best fuel to achieve the outcomes, but simply state the desired outcomes and apply the policy in a fuel-neutral manner. This may have the market effect of favoring a fuel even though the policy does not do so explicitly.

For example, a fuel-neutral policy regime that rewards occupant health, pollution reduction, and customer savings without specifying the fuel source may have the effect of favoring electric heat pumps over oil furnaces in a marketplace, since electric heat pumps are a more cost-

effective method of achieving improved occupant health, pollution reduction, and customer savings than oil furnaces.¹³

Act 129 requires reduction in energy consumption in a cost-effective manner, without preferring fuel sources [66 Pa.C.S. § 2806.1(a)]. The Commission, however, has implemented a fuel-switching policy that explicitly favors natural gas and other fossil fuels over electricity even if that option fails to reduce energy consumption or is less cost-effective. This policy is inconsistent with the goals of Act 129 and should be updated.

The Commission's fuel switching policy, developed in the Fuel Switching Policy Working Group Staff Report and first expressed through the 2011 Technical Resource Manual (TRM), might be more appropriately called load-shedding than fuel-switching. According to the 2011 TRM, EDCs may credit 100 percent of the decrease in electricity consumption from electric-to-fossil fuel conversions toward their savings goals with no corresponding debit for the increased fossil fuel consumption [2011 TRM at 73]. The 2019 TRM accounts for a nominal increase in electricity use from the furnace fan [Phase IV TRM Volume II at 31]. The effect of this policy is to encourage EDCs to push electric heating customers towards fossil fuel or other non-electric heating, rather than the most energy efficient or cost-effective measure, which is the expressed purpose of Act 129.

Consider a customer seeking to replace a baseboard electric heating unit that consumes 10,000 kwh annually. If an EDC incentivizes the replacement of the electric heating unit with a gas heating unit, the EDC will be able to credit 10,000 kwh towards their Act 129 savings target, less only the nominal amount of electricity consumed to power the furnace fan, for a net electricity savings of nearly 10,000 kwh. On the other hand, if the EDC incentivizes the replacement of the baseboard electric heating unit with a more efficient electric heat pump that consumes 7,000 kwh¹⁴, they are credited the total net difference between the two units' energy consumption,

¹³ The Economics of Electrifying Buildings, Rocky Mountain Institute, 2018, available at <http://www.rmi.org/insights/reports/economics-electrifying-buildings/>

¹⁴ Northeast/Mid-Atlantic Air-Source Heat Pump Market Strategies Report 2016 Update, NEEP, available at https://neep.org/sites/default/files/NEEP_ASHP_2016MTStrategy_Report_FINAL.pdf found average annual savings from replacing resistance heating with an air source heat pump of 3,000 kwh

3,000 kwh. The EDC is able to achieve more than triple the savings by pushing fuel-switching from electric to gas than by incentivizing an efficient electric unit.

This asymmetric treatment of gas and electric serves as a strong motivator for EDCs to favor fossil fuel switching over measures to improve the energy efficiency of electric heating, particularly, as in the case of PECO, when the EDC is affiliated with a natural gas distribution company (NGDC) that is able to recover the lost electricity revenues through increased natural gas sales. For evidence of the EDC's priorities, PECO's Phase III plan includes a \$1500 rebate for fuel switching but only a \$285 rebate for upgrading an electric heating unit [PECO Phase III Plan at 153]. However, an EDC need not be affiliated with an NGDC to be motivated to seek large electricity savings from asymmetric treatment of fuel switching, since electricity sales will be reduced in any case in order to meet Act 129 savings targets.

The Commission has applied fuel neutrality in the TRC Test and applied a symmetrical, fuel-neutral approach by counting increased fossil fuel consumption from fuel switching as a cost [Phase IV Final TRC Test at 82]. However, because TRC benefits are applied on a portfolio- rather than measure-level the symmetric TRC treatment is not sufficient to ensure that EDCs take a fuel-neutral approach to each measure.

Lastly, KEEA acknowledges that symmetric treatment of electric and gas heating savings requires a change in the TRM and this feedback would have perhaps have been more appropriate in the TRM Comments. However, the Commission may modify the TRM at any time and the inclusion of fuel-switching measures in implementation plans is a significant issue in the development of Phase IV of Act 129. Therefore, KEEA recommends the Commission revise the TRM in advance of Phase IV, to ensure a fuel-neutral, symmetrical approach to any fuel-switching by debiting the increased consumption of fossil fuels for fuel-switching measures, through a conversion of BTUs to kwh. Alternatively, if the Commission determines that such a conversion is not possible within the constraints of the Act 129 legislation, then the Commission should discontinue the use of fuel-switching in Act 129 plans.

CONCLUSION

KEEA thanks the Commission for the opportunity to submit these comments. We look forward to working with the Commission, the EDCs, and all other stakeholders to develop Phase IV programs that capture the full potential of energy efficiency as a resource to deliver energy savings, economic development, improved health, and many other lasting benefits.

Sincerely,



Julian Boggs

Policy Director, Keystone Energy Efficiency Alliance

APPENDIX

Table 1. Proposed Act 129 Budgets Adjusting for Real Costs (\$1,000,000)

EDC	Annual Budget (2006\$)	Annual Budget (2019\$)	Current Proposed Phase IV Budget	KEEA Proposed Phase IV Budget
Duquesne Light	\$19.55	\$24.38	\$97.73	\$121.90
PECO	\$85.48	\$106.62	\$427.39	\$533.11
PPL	\$61.50	\$76.71	\$307.51	\$383.57
Met-Ed	\$24.87	\$31.02	\$124.33	\$155.09
Penelec	\$22.97	\$28.66	\$114.87	\$143.29
Penn Power	\$6.66	\$8.31	\$33.30	\$41.54
West Penn Power	\$23.56	\$29.39	\$117.81	\$146.96
Total	\$244.59	\$305.09	\$1,222.94	\$1,525.45

Table 2. Proposed Act 129 Savings Targets Under Adjusted Budgets (GWh)

EDC	Current Proposed Incremental Savings Target	KEEA Proposed Incremental Savings Target
Duquesne Light	340	421
PECO	1,330	1,667
PPL	1,214	1,523
Met-Ed	451	562
Penelec	423	532
Penn Power	125	156
West Penn Power	492	616
Total	4,375	5,478

Table 3. Comparison of Non-Lighting and Non-Low Income Acquisition Costs, Phase III YTD vs Phase IV Potential Study (\$/MWh)

EDC	PY8-PY10 Acquisition Costs, excluding lighting and low-income	Phase IV Potential Study Acquisition Cost excluding lighting and low-income	Percent Increase
Duquesne	112	227	102%
Met Ed	146	239	63%
Penelec	121	241	99%
Penn Power	137	206	50%
West Penn Power	117	219	87%
PECO*	84	265	216%
PPL	150	194	29%
Statewide	121	218	81%

*PECO spending by program was unavailable. PY8-10 acquisition costs are estimates based on FirstEnergy

Table 4. Phase III Savings From Low-Cost Measures (MWh)

Program Year	C&I Lighting	Residential Lighting	Home Energy Reports	Total Savings	Percent of Savings
PY8	206,907	441,495	208,355	1,052,410	81%
PY9	460,214	501,109	218,462	1,457,892	81%
PY10	450,607	519,143	193,194	1,493,258	78%
Total PY 8-10	1,117,728	1,461,747	620,011	4,003,560	80%

Table 5. Phase III Savings Potential from Lighting and Behavioral Programs (MWh)

Sector	All Programs	Lighting Programs	Behavioral Programs	Percent Lighting + Behavioral
Residential	3,722,120	1,326,647	516,296	50%
Commercial	1,853,605	762,669		41%
Industrial	1,173,082	167,758		14%
Total	6,748,807	2,257,074	516,296	41%

Table 6. EDC Expenditures vs Max Budget (\$1000)

Year	EDC Expenditure (\$1000)	Act 129 Budget (\$1000)	Excess Budget (\$1000)	Budget Utilization
PY1	\$36,117	\$244,589	\$208,472	15%
PY2	\$178,422	\$244,589	\$66,167	73%
PY3	\$205,783	\$244,589	\$38,806	84%
PY4	\$209,402	\$244,589	\$35,187	86%
PY5	\$167,054	\$244,589	\$77,534	68%
PY6	\$200,781	\$244,589	\$43,808	82%
PY7	\$228,450	\$244,589	\$16,139	93%
PY8	\$170,716	\$244,589	\$73,872	70%
PY9	\$183,239	\$244,589	\$61,349	75%
PY10	\$195,268	\$244,589	\$49,321	80%
Total PY 8-10	\$549,223	\$733,766	\$184,542	75%
Total All Years	\$1,775,231	\$2,445,885	\$670,654	73%
Total PY 2-10	\$1,739,114	\$2,201,297	\$462,182	79%