

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

En Banc Hearing on Alternative
Ratemaking Methodologies

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Docket No. M-2015-2518883

TESTIMONY OF THE KEYSTONE ENERGY
EFFICIENCY ALLIANCE, CLEAN AIR COUNCIL,
AND NATURAL RESOURCES DEFENSE COUNCIL

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On behalf of KEEA, CAC, and
NRDC.

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I. INTRODUCTION

The Keystone Energy Efficiency Alliance (“KEEA”), Clean Air Council (“CAC”), and Natural Resources Defense Council (“NRDC”) are pleased to submit written testimony to the Pennsylvania Public Utility Commission (“Commission” or “PUC”) in this docket on Alternative Ratemaking Methodologies. Further, KEEA looks forward to presenting this testimony to the Commission at its March 3 *En Banc* Hearing.

KEEA, CAC, and NRDC share the common goal of advancing energy efficiency and other clean energy sources across the Commonwealth, and were parties to the settlement that resulted in PPL’s and PECO’s revenue decoupling collaborative in February of 2016. We applaud the PUC for identifying the need to investigate alternative rate-design mechanisms, and for inviting interested stakeholders to provide testimony on whether: (1) revenue decoupling or other similar rate mechanisms can encourage energy utilities to better implement energy efficiency and conservation (“EE&C”) programs; (2) whether such rate mechanisms are just and reasonable and in the public interest; and, (3) whether the benefits of implementing such rate mechanisms outweigh any costs associated with implementing the rate mechanisms.

II. DISCUSSION

Over the past decade, advanced energy resources such as energy efficiency, smart metering, and distributed generation have significantly changed the characteristics of the energy utility industry, a trend will only accelerate as this technology matures. Market forces and public policy choices have driven down the cost of advanced energy resources and increased their proliferation in Pennsylvania. As a result, utilities now face new and different costs, changes in consumer expectations and demands, increased competition from alternative energy resources, and above all else, flat or declining energy sales across the Commonwealth.¹ Unfortunately, traditional rate-design, which ties utility revenue to volumetric energy sales, is poorly suited to encourage, or even accommodate, these changes in the energy utility industry. Consequently, utilities have a disincentive to deploy advanced energy resources despite their benefits to ratepayers and overall health of the Commonwealth’s energy system. Therefore, to better align utility financial incentives with advanced energy resources, the Commission, utilities, and

¹ D. Washko, ELECTRIC POWER OUTLOOK FOR PENNSYLVANIA 2014-2019, PA PUC (Aug. 2015) *available at*, http://www.puc.state.pa.us/General/publications_reports/pdf/EPO_2015.pdf

stakeholders should work towards creating a rate-design that: (1) incentivizes the adoption of advanced energy resources; and, (2) includes adequate consumer protections to ensure stable electricity rates that are just and reasonable for customers. The best way to accomplish this goal is to adopt full revenue decoupling complimented by performance incentive mechanisms (“PIMs”) that provide positive financial incentives to utilities that voluntarily exceed performance mandates set by statutes such as Act 129.

A. Full Revenue Decoupling Will Remove the Disincentives Utilities Have with Regard to the Deployment of Advanced Energy Resources

The first step towards a rate-design that supports advanced energy technologies is full revenue decoupling. Full revenue decoupling removes the throughput incentive that encourages utilities to increase their volumetric energy sales to increase revenues. By decoupling utility revenues from utility sales, utilities would no longer face decreased earnings when customers decrease energy consumption by taking advantage of advanced energy resources. Therefore, revenue decoupling removes the disincentive utilities face in accommodating and supporting advanced energy resources that reduce energy consumption, decrease overall system costs, and provide benefits to ratepayers.

Ratemaking under revenue decoupling varies little from current practices. Utility revenue requirements and base rates are still determined in a rate case with existing conventions. However, unlike traditional ratemaking, revenue decoupling includes a target revenue requirement set for each year between rate cases, and an adjustment mechanism that adjusts rates up or down to reflect differences between a utility’s target revenues and actual revenues. Finally, revenue decoupling can include a number of additional design options, discussed in Section C, to meet the specific needs of the Commonwealth and address concerns that utilities and stakeholders may have. Revenue decoupling structured in this manner provides several advantages over traditional rate-design.

First, revenue decoupling will allow utilities to better leverage energy efficiency as a least-cost alternative energy resource. The Commonwealth’s mandated advanced energy programs, such as those contained in Act 129, provide many benefits for Pennsylvania’s ratepayers. For example, Act 129 EE&C programs have supported over 42,000 jobs, accrued a net benefit of \$4 billion for Pennsylvania’s ratepayers, and will ultimately result in 15 million

MWh of electricity savings by the end of Phase III.² Further, the increased deployment of energy efficiency will avoid costly transmission and distribution (“T&D”) upgrades, reduce exposure to fuel price volatility, suppress prices, and reduce environmental compliance costs.³ Despite these benefits, however, traditional rate-design generally dissuades utilities from voluntarily pursuing cost-effective advanced energy measures because: (1) programs add expenses that erode other operational efficiencies; (2) successful programs reduce revenues; and (3) investments in demand-side EE&C measures do not result in a comparable rate of return to supply-side investments. The implementation of revenue decoupling would remove these barriers and decrease the likelihood that a utility would initiate a burdensome rate case to recover increasing costs. Finally, full revenue decoupling would remove barriers to investment in all advanced energy resources, not only Act 129 mandated EE&C programs.

Second, revenue decoupling will reduce pressure on utilities to seek increased fixed customer charges to cover rising costs. A fundamental principle of ratemaking is the concept that a utility should be able to recover its prudently incurred costs and make a reasonable rate of return on its investments. Historically, load growth allowed utilities to increase revenues between rate cases to cover their increasing costs. However, every utility in the Commonwealth now faces decreasing or flat load growth, which makes it more difficult for utilities to cover their costs between rate cases through volumetric sales alone.⁴ Consequently, rate cases have become more frequent and utilities have advocated for increasing customer fixed charges. However, as explained in Section D, high fixed charges present serious problems for low-income and low-usage customers, and undermines programs and technologies that reduce energy consumption and diversifies the Commonwealth’s energy sources. Alternatively, revenue decoupling obviates the need for increased fixed charges by adjusting energy rates up or down each period to ensure

² See ACT 129, SWE FINAL ANNUAL REPORT PHASE I, at 59. *available at*, <http://www.puc.state.pa.us/pedocs/1274547.pdf>; ACT 129, SWE ANNUAL REPORT PHASE II PY 5, at 6. *available at* http://www.puc.state.pa.us/Electric/pdf/Act129/SWE_PY5-Final_Annual_Report.pdf THE ACT 129 PHASE III EE&C PROGRAM FINAL IMPLEMENTATION ORDER (June 11, 2015). *available at*, http://www.puc.state.pa.us/filing_resources/issues_laws_regulations/act_129_information/energy_efficiency_and_conservation_cc_c_program.aspx/

³ For Example, the New England ISO recently identified over \$400 million in previously planned transmission system investment just in Vermont and New Hampshire that it is now deferring beyond its ten-year planning horizon as a result of those states energy efficiency programs. See C. Neme & J. Grevatt *Energy Efficiency as a T&D Resources: Lessons From Recent US Efforts to use Geographically Targeted Efficiency Programs to Defer T & D Investments*, Northeast Energy Efficiency Partnership (2015).

⁴ ELECTRIC POWER OUTLOOK, *supra* note 1.

that a utility meets its revenue requirement even if customer energy consumption decreases, no matter the cause of the decrease.

Third, revenue decoupling will increase the efficiency of the entire energy system by making cost reductions the primary method by which a utility can increase profits between rate cases. Under traditional rate-design, a utility can increase its profits between rate-cases by either increasing electricity sales or reducing costs. Generally, whenever a utility increases electricity sales, it will incur additional costs that will be included in its revenue requirement in its next rate case. Therefore, over the long-run, the incentive to increase sales will result in higher overall costs to ratepayers due to the increased distribution costs associated with providing more customers with more energy. Revenue decoupling removes a utility's incentive to increase sales through the use of the adjustment mechanism, which would adjust energy rates downward if a utility collected revenue in excess of its revenue requirement by increasing energy sales. Therefore, under revenue decoupling, a utility's primary method by which to increase profits is to increase its overall efficiency. In the long-run this would result in lower utility costs, and therefore, a lower customer costs.

Finally, revenue decoupling can decrease utility risk to the benefit of all ratepayers. Under traditional rate-design, utilities tend to face more risk than other industries because events out of utilities' control can significantly effect utility revenues, and therefore, shareholder earnings. Conversely, under revenue decoupling utilities face less revenue volatility, and therefore, less earnings volatility. From the perspective of utility shareholders, less volatility means less risk, and should result in lower capital costs for utilities. The effect of revenue decoupling on utility risk has been acknowledged by several credit rating agencies who have acknowledged the positive effect of revenue decoupling on utilities creditworthiness. For example, Standard and Poor's views decoupling as "a positive development from a credit perspective," and Moody's upgraded Arizona's utilities credit rating following their adoption of a decoupling mechanism.⁵ Therefore, revenue decoupling has the potential to decrease the utility industry's cost of capital, which would likely decrease utilities' costs, and therefore, revenue requirement when compared to traditional ratemaking.

⁵ See Moody's, Special Comment on Cost Recovery for Utilities (2010); and Standard and Poor's, Decoupling Impact on Credit Rating (2008).

Taken together, the benefits of revenue decoupling would have a significant positive impact on the energy utility industry in the Commonwealth. By removing the throughput incentive, utilities would not be incentivized to increase energy sales to increase revenues, a practice that is becoming increasingly impracticable in an environment with flat and declining energy sales. Instead, utilities would be able to deploy lower-cost advanced energy resources such as energy efficiency, which would result in avoided system costs, more savings opportunities for customers, and ultimately, an energy system better positioned to transition to the 21st century utility model.

B. Revenue Decoupling Should be Implemented Alongside Performance Incentive Mechanisms

The second step towards a rate design that better incentivizes advanced energy resources are performance incentive mechanisms (“PIMs”). As explained in the Section A, revenue decoupling is a better method by which to respond to the new challenges facing the energy utility industry than traditional ratemaking, particularly with regard to the increased proliferation of alternative energy resources such as energy efficiency. However, while revenue decoupling removes utilities financial disincentives to pursue advanced technologies that reduce energy consumption, it does not provide a positive incentive to utilities to pursue these technologies *per se*. Therefore, in order to better incentivize utilities to aggressively pursue actions that will reduce energy consumption, the Commission should adopt targeted performance incentive mechanisms (“PIMs”) alongside revenue decoupling.

A PIM is a mechanism that links a utility’s revenue to its performance in meeting certain targets that advance the public policy goals of the Commonwealth. PIMs can be used for a multitude of desired policy goals, such as energy efficiency, advanced metering, peak load reduction, and reliability, among others. In the context of EE&C programs, PIMs are usually designed to reward utilities for any savings beyond what is required by the program. In Pennsylvania, this would mean that a utility would receive a financial reward for any additional and voluntary energy savings it achieves beyond what is required by Act 129. Tracking utilities progress towards exceeding their EE&C goals would be relatively easy given the data made available by the Statewide Evaluator (“SWE”) reports. Stated simply, if a utility took voluntary measures to exceed its Act 129 mandated targets, it would receive financial compensation.

The type of compensation a utility receives for exceeding its targets can take several forms. For instance, compensation could be based on shared savings, and would grant the utility a share of the estimated net benefits that result from their EE&C programs. Alternatively, utilities could be provided with a bonus at a set rate for each MWh of load savings beyond their savings target. No matter the exact form of compensation, PIMs would provide a strong positive incentive for utilities to pursue all cost-effective energy efficiency savings, and bring Pennsylvania in line with other innovative states that have PIMs.

There exists significant precedent for the implementation of PIMs alongside revenue decoupling. A 2014 survey found that of the 29 states that had PIMs, 24 of them also had some form of revenue decoupling.⁶ Of the types of PIMs implemented, energy efficiency PIMs are the most widespread.⁷ Further, while a number of factors contribute to EE&C performance, those states that have adopted decoupling complimented by PIMs, have reaped considerable benefits in the form of avoid generation, transmission, and distribution costs.⁸

The adoption of revenue decoupling complimented by PIMs would have a transformative effect on utilities in the commonwealth. First, revenue decoupling would remove the incentive for utilities to consistently increase their sales, thereby shifting their focus toward increasing system efficiency, which will decrease overall energy costs in the long run. Second, PIMs will provide utilities with new avenues to increase revenue that better reflect the public policy goals of the Commonwealth, such as reduced energy consumption, reduced costs, better load management, grid congestion, and more customer control over how and when they consume energy. Together, these measures would lay the groundwork for the utility of the future while addressing the issue of revenue erosion prevalent across the Commonwealth's energy utility industry.

C. Revenue Decoupling Can Include Adequate Consumer Protections

Despite the numerous advantages offered by revenue decoupling and PIMs, consumer and low-income advocates have expressed legitimate concerns over revenue regulation as it relates to the allocation of risk and its effect on the stability of customer bills. States that passed

⁶ Edison Foundation Institute for Electric Innovation, STATE ELECTRIC EFFICIENCY REGULATORY FRAMEWORKS (2014).

⁷ *Id.*

⁸ See Grevatt, *supra* note 3.

decoupling without adequate consumer protections in place lead many advocates to question the benefits of changing present forms of regulation. The Commission can address these concerns by embedding certain consumer protections in the design stages. Therefore, KEEA recommends, at a minimum, the two following consumer protections:

1. Require a Fully-Litigated Rate-Case Every Three Years

A full revenue decoupling mechanism should include periodic, fully-litigated rate cases every three years. Rate cases provide opportunities for stakeholder input, ensuring utilities receive revenues that are adequate to cover their prudently incurred costs plus a reasonable rate of return, and confirming that utilities are not over-, or under-collecting revenues. Despite these benefits, however, rate cases can be extremely burdensome for all parties involved. Therefore, balancing the benefits of rate cases with their costs is essential for efficient utility regulation. Revenue decoupling that includes periodic rate cases every three years can strike this balance.

Generally speaking, utility rate cases suffer from two problems; they either occur too frequently, or not frequently enough. Utilities that initiate rate cases often due to under-collection of allowed revenues represent a significant regulatory burden to stakeholders. Annual litigation by stakeholder groups requires significant resources that cannot be used elsewhere. Full revenue decoupling addresses this burden by reducing the frequency of rate cases for these utilities. From the utility perspective, there is no need to initiate a rate case because the revenue adjustment mechanism will adjust rates accordingly in the event that the utility does not meet its revenue requirement. From the stakeholder perspective, it retains the opportunity for input through a rate case, but does not need to do so on an annual basis.

Alternatively, there are those utilities who do not initiate rate-cases frequently enough. There are benefits to infrequent rate cases, namely, lower administrative costs. However, when utilities come in infrequently for rate cases, it is difficult for interested stakeholders to ensure that utilities are not over-collecting revenues at the expense of ratepayers. Normally, if a stakeholder suspects a utility is over-earning, its only recourse is to initiate a rate case where the burden of proof is on them to show a utility is in over-earning. This is a very high bar to meet for many stakeholders, and discovery alone can be overly-burdensome. Revenue decoupling addresses this problem by requiring more regular rate-cases, and more importantly, automatically adjusting rates downward each period in the event that a utility is over-earning.

2. Place a Cap on the Size of the Revenue Adjustment in Each Period

One of the concerns most often raised by stakeholders is the effect that revenue decoupling would have on customer's bill stability. It is well documented that revenue decoupling does not usually result in more than a three percent change in customer's bills each period.⁹ Further, it has been observed that nearly 40% of all revenue decoupling adjustments nationwide result in rate decrease.¹⁰ However, to fully address this important concern, revenue decoupling can be designed to include an asymmetrical cap on the amount of revenues that can be recovered from customers from any single adjustment. An asymmetrical cap would only apply to rate increases, not rate decreases. Therefore, in the event that the utility collects more than its revenue target, there is no limit on how much excess revenue it could return to the customer. A cap constructed in this manner is preferred, because a utility would still meet its revenue requirement even if it returned all of its excess revenue to customers. Alternatively, if the utility collects significantly less revenue than its allowed revenue, customers could be harmed as a result of the rate increase. Thus, the price cap would limit the extent to which customers would be exposed to price increases.

Similar to bill stability, some stakeholders have been concerned about the effect revenue decoupling would have on those customers that are unable to reduce energy consumption through advanced energy resources, due to an inability to pay, or medical needs that necessitate a certain level of fixed consumption. KEEA shares these concerns, and has worked with national experts to discern the impact that revenue decoupling would have on these customers. KEEA would like to offer several recommendations and observations to address this concern.

While revenue decoupling would increase customer bill volatility, it would not materially increase customer risk when a 3% cap on rate increases is included in the decoupling mechanism. For example, based on a 2012 EIA study, the average residential electricity rate in Pennsylvania was \$.1275/kWh, and the average residential consumption was 837kWh a month, for an average monthly cost of \$107.¹¹ Were this rate to increase 3%, under full revenue decoupling with a cap, it would change the kWh rate by \$0.0038 to \$0.1313. If demand remained completely inelastic, the new-average customer bill would be \$109.8, for a total bill

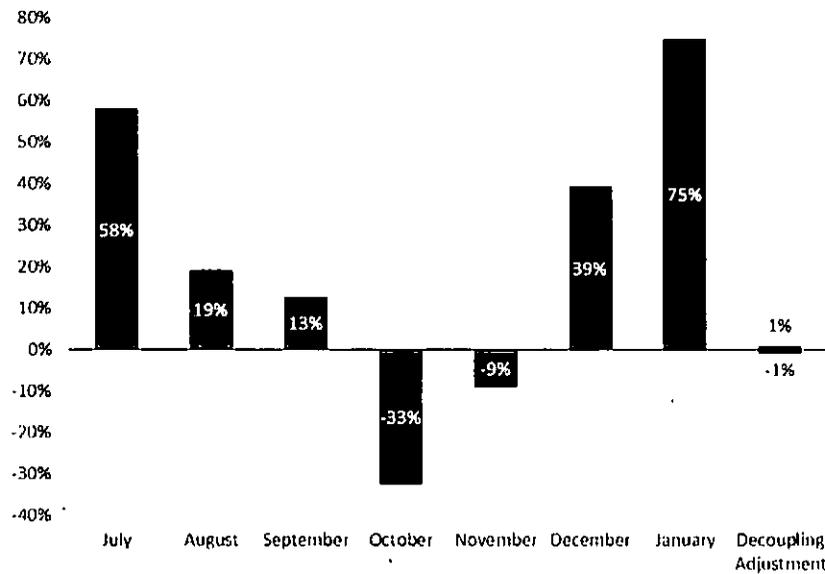
⁹ Pamela Morgan, A DECADE OF DECOUPLING FOR US ENERGY UTILITIES: RATE IMPACTS, DESIGNS, AND OBSERVATIONS (Dec. 2012).

¹⁰ *See id.*

¹¹ U.S. Energy Information Administration, Form EIA-860, "Annual Electric Generator Report (2012).

increase of \$2.80 a month. KEEA understands that for certain customers, this bill increase could be substantial, especially for those high-use low-income users. However, as the chart below indicates, the potential increase in customer bills is relatively small when compared to month-to-month bill volatility for an average user:

Figure 1- Average Monthly Change in Electricity Usage¹²



In addition to a cap on rate increases, the Commission could also include targeted PIMs to reward those utilities that assist low-income users who have not been reached by LIHEAP, WAP, or Act 129 EE&C programs. By increasing the proliferation of advanced energy resources among those users that have historically been unable to leverage deeper efficiency savings, low-income customers would experience a net decrease in their utility bills. Therefore, revenue decoupling with a cap on rate increases, complimented with targeted PIMs, would have the potential to lower the costs for low-income users, while avoiding increased fixed charges that would harm those customers the most.

¹² Tim Woolf, *Revenue Decoupling Adjustment & Bill Volatility for Typical Customer Bill* (Feb. 2015).

D. Other Alternative Rate Mechanisms Such as Straight Fixed Variable Rates and Lost Margin Recovery Should not be Adopted by the Commission

Revenue decoupling along with PIMs can address revenue erosion, incentivize energy efficiency, and provide consumers with just and reasonable rates. However, in addition to revenue regulation, the Commission identified other forms of alternative rate-design for which it is seeking information. These include: (1) straight fixed variable (SFV) rate design; and, (2) lost margin recovery mechanisms (“LRAMs”) for conservation programs. While these alternative design mechanisms do address some issues raised by the Commission, they have serious disadvantages compared to full revenue decoupling complimented by PIMs

Of the other alternative rate-design mechanisms, there is no rate-design more antithetical to the stated goals of this docket, and to Pennsylvania ratepayers than SFV. Under SFV, all “fixed costs” are recovered in a fixed monthly charge, and only those costs that are considered “variable,” in the short term, are recovered on a per kWh basis. A central element of SFV is the assumption that the entire distribution system represents a customer-related fixed cost. At the outset, it is important to note that when looking at costs on a longer planning horizon, many purported fixed costs, like the distribution system, are actually variable. SFV is functionally the same as revenue decoupling, because it makes utilities indifferent to changes in customer’s energy consumption. However, the structure for SFV creates serious problems not present in revenue decoupling.

As it relates to the purpose of this Docket, SFV can discourage the adoption of advanced energy resources that reduce electricity consumption. Generally, SFV results in a significantly higher fixed charges, and a reduced per kWh rate. Therefore, a larger portion of a customer’s bill is fixed. As a result, when a customer makes an investment to become more efficient, it has less of an impact on the size of their monthly bill, thereby increasing the payback period for their investment. Further, because electricity demand is elastic, lower kWh rates can actually increase electricity usage by up to 10%, which would completely erode the efficiency gains made by the Commonwealth thus far.¹³

¹³ J. Lazar, RATE DESIGN WHERE ADVANCED METERING INFRASTRUCTURE HAS NOT BEEN FULLY DEPLOYED, REGULATORY ASSISTANCE PROJECT, (2013).

Moreover, SFV can present serious social justice concerns, whereby low-usage low-income customers actually end up subsidizing those customers with the highest electricity usage. The following chart prepared by Regulatory Assistance Project illustrates this potential problem:

Figure 2- Fixed Charge Effect¹⁴

Example of Fixed Charge Effect

Rate Design		Typical Rate	SFV Rate	Difference
Customer Charge		\$7.00	\$57.00	
Energy Charge		\$0.10	\$0.05	
Customer Bills	kWh/month			
Average Customer	1000	\$107.00	\$107.00	0%
Apartment Dweller	500	\$57.00	\$82.00	44%
Extra-Large Residence	2500	\$257.00	\$182.00	-29%

Finally, SFV runs counter to the original purpose of public utility regulation, which is to prevent the exercise of monopoly pricing by a natural monopoly. Nearly every other industry recovers both its fixed and variable costs through volumetric pricing. Indeed, in a competitive environment it would be nearly impossible for a firm to charge a customer all of its short-run fixed costs as a prerequisite for being a customer. This pricing behavior has been imparted to natural monopolies, such as utilities, through existing volumetric pricing, which incentivizes them to minimize costs and maximize customer satisfaction because they must compete with alternative energy resources such as distributed generation, and energy efficiency, or alternative providers. Therefore, SFV runs directly counter to the concept regulatory compact.

Lost margin-recovery mechanisms (LRAM), which is often referred to as “limited decoupling”, is better than fixed charges or SFV, but does not provide the same benefits as full revenue decoupling. LRAMs are usually designed to recover only the lost distribution margin related to utility-operated energy efficiency programs, such as Act 129. Generally, such a mechanism would remove the disincentive for utilities to operate their own EE&C programs.

¹⁴J Lazar, SMART RATE DESIGN FOR A SMART FUTURE, APPENDIX D: THE SPECTER OF STRAIGHT FIXED/VARIABLE RATE DESIGNS AND THE EXERCISE OF MONOPOLY POWER (July 2015).

While an LRAM would remove the disincentive for utilities to operate their Act 129 programs, it would not impact any other aspect of the throughput incentive that creates barriers to the deployment of other advanced energy resources such as smart meters, time of use rates, demand response, and distributed generation. Further, an LRAMs would not effect a utilities incentive to increase electricity sales or make T&D upgrades like revenue decoupling would. Finally, the verification of the actual cause of decreased revenues is harder to quantify under an LRAM, because it must separate EE&C's impact on revenues from other potential causes. Therefore, when compared to full revenue decoupling, LRAMs are a more complicated, less effective mechanism.

III. CONCLUSION

The energy utility is currently undergoing a significant transformation. Public policy choices and market forces have increased the proliferation of technologies, which by their very nature, reduce energy consumption. Overall, this trend has been beneficial, and will continue to provide significant utility, participant, and societal benefits. However, the types of incentives that traditional rate-design currently imparts on utilities is poorly suited to respond to this transformation. Instead, utilities face financial disincentives when it comes to supporting, or even accommodating this sea change. Therefore, KEEA believes the adoption of full revenue decoupling complimented by PIMs is essential to address the challenges currently facing the energy utility industry while laying the groundwork for the utility of the future. KEEA thanks the PUC for holding this hearing, and we hope the Commission continues to explore the advantages and disadvantages of revenue decoupling and removing barriers to Energy Efficiency.

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