PULP
PENNSYLVANIA
UTILITY LAW PROJECT

February 9, 2021

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor North
P.O. Box 3265
Harrisburg, PA 17105-3265

Re: Joint Petition for Consolidation of Proceedings and Approval of the Phase IV Energy Efficiency and Conservation Plan of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company, Docket Nos. M-2020-3020820, M-2020-3020821, M-2020-3020822, M-2020-3020823
CAUSE-PA § 5.412a filing of admitted evidence

Secretary Chiavetta,

Pursuant to 52 Pa. Code §5.412 and the attached *Interim Order Confirming Admitted Evidence* in the above referenced proceeding, enclosed, please find copies of the Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania's (CAUSE-PA) CAUSE-PA's admitted evidence, including:

- CAUSE-PA Statement 1, the Direct Testimony of Jim Grevatt
  - Attachment A – Resume of Jim Grevatt
  - Jim Grevatt Verification
- February 9, 2020 *Interim Order Confirming Admitted Evidence*

Pursuant to the Commission's Emergency Order issued on March 20, 2020, and as indicated on the attached Certificate of Service, service on the parties was accomplished by email only.

Respectfully,

John W. Sweet, Esq.
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CC: Certificate of Service

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BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Joint Petition for Consolidation of Proceedings and Approval of the Phase IV Energy Efficiency and Conservation Plan of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company	:	Docket Nos. M-2020-3020820 M-2020-3020821 M-2020-3020822 M-2020-3020823

Certificate of Service

I hereby certify that I have this day served copies of the ***CAUSE-PA § 5.412a filing of admitted evidence,*** upon the parties of record in the above captioned proceeding in accordance with the requirements of 52 Pa. Code § 1.54 and consistent with the Commission's Emergency Order issued on March 20, 2020.

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February 9, 2021

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DIRECT TESTIMONY OF JIM GREVATT

ON BEHALF OF

THE COALITION FOR AFFORDABLE UTILITY SERVICES AND

ENERGY EFFICIENCY IN PENNSYLVANIA ("CAUSE-PA")

January 13, 2021

PREPARED DIRECT TESTIMONY OF JIM GREVATT

Q. Please state your name, title, and employer.

A. My name is Jim Grevatt. I am a Managing Consultant at Energy Futures Group, located at 10298 Route 116, Hinesburg, VT 05461.

Q. Please describe Energy Futures Group.

A. Energy Futures Group ("EFG") is an energy efficiency consulting firm established in 2010. EFG specializes in the design, implementation, and evaluation of energy efficiency programs and policies, with an emphasis on cutting edge strategies to cost-effectively achieve deep levels of savings and broad program participation. EFG has worked on behalf of utilities and other energy efficiency program administrators, government and regulatory agencies, and environmental, low income, and affordable housing advocacy organizations in 40 states and Canadian provinces, as well as several countries in Europe. EFG's recent work has included serving as advisors on the development of efficiency program portfolios and policies in eight of the ten highest-ranking states in the American Council for an Energy-Efficient Economy's ("ACEEE") 2018 State Energy Efficiency Scorecard. In addition, EFG played key roles in developing a report on lessons learned from leading residential retrofit programs in North America and Europe; an analysis on the key pitfalls that can be encountered in performing energy efficiency potential studies; a study of emerging practices in the use of energy efficiency to defer or entirely avoid electric transmission and distribution upgrades; the development of a regional residential lighting strategy for the Northeast; and an assessment of the effectiveness of leading efficiency financing initiatives.

I. INTRODUCTION

Q. Please summarize your professional and educational experience.

A. I have worked in the energy efficiency industry since 1991 in a wide variety of roles. Prior to joining EFG in 2013, I served as the Director of Residential Energy Services at Efficiency Vermont and the District of Columbia Sustainable Energy Utility. I also helped develop and launch the award-winning natural gas energy efficiency programs at Vermont Gas Systems, where I worked for eleven years, including four years as the Manager of Energy Services. I have extensive hands-on experience conducting hundreds of energy audits for Vermont's Low Income Weatherization Assistance Program and Vermont Gas Systems' DSM programs.

In my current role as Managing Consultant at EFG, I have advised regulators, utilities, and other energy efficiency program administrators, environmental organizations, and low income and affordable housing advocates in numerous states, including California, Colorado, Delaware, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Mississippi, Missouri, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, Pennsylvania, Vermont, Virginia, and West Virginia, as well as the Canadian provinces of British Columbia and Manitoba. I focus on using my in-depth knowledge of energy efficiency program management and operations as well as experience in strategic planning to ensure that programs achieve their desired market impacts.

I received a B.F.A. from the University of Illinois.

My resume, included as Attachment A, provides additional detail regarding my professional and educational experience.

Q. Have you previously testified in any proceeding before the Pennsylvania Public Utilities Commission?

A. Yes, I recently testified on behalf of CAUSE-PA in Docket No. P-2014-2459362. I have also testified before utility commissions in Colorado, Florida, Illinois, Iowa, Indiana, Kentucky, Nevada, North Carolina, Vermont, Virginia, and West Virginia, as well as in the Canadian provinces of British Columbia and Manitoba.

Q. On whose behalf are you testifying in this case?

A. I am testifying on behalf of the Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania ("CAUSE-PA").

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to offer observations on the portfolio of energy efficiency programs that Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company (collectively, "Companies" or "First Energy") propose in hopes that I may inform the Commission's consideration of the Companies' Petition. The Companies filed a Petition for Approval of their Act 129 Phase IV Energy Efficiency and Conservation Plan (Phase IV Plan) on November 30, 2020 with the Pennsylvania Utility Commission (Commission). The Phase IV Plan was filed pursuant to the requirements of Act 129 and the Commission's Act 129 Phase IV Implementation Order, Energy Efficiency and Conservation Phase IV Implementation Order (Implementation Order), entered on June 18, 2020, at Docket No. M-2020-3015228 (Phase IV Implementation Order). Specifically, I discuss the sufficiency of the Companies' approach to programs that are intended to reduce the energy bills of those customers who lack the financial means to make investments in energy efficiency, i.e. households with income at or below 150% of the federal poverty income level (FPL). Throughout this testimony, the term "low income" as applied to persons or households will refer to those individuals and/or households whose income is at or below 150% FPL.

Q. What are your principal observations about the Companies' filing?

A. My principal observations are as follows:

1. The Companies' plan includes a variety of programs and program sub-components that collectively are intended to achieve compliance with the Companies' requirement to achieve 5.8% of their total portfolio savings for low income customers. The Companies' low income focused initiatives span a variety of measures and program types but fail to meet the level of comprehensiveness provided for in the Commission's directives. In fact, some of the proposed initiatives stretch beyond a reasonable interpretation of the Commission's directive that savings counted towards the low income savings requirement must come "from programs solely directed at low income customers or low income verified participants in multifamily housing programs."[1] For example, nearly 14% of West Penn's low income savings are expected to come from the "School Education – LI" initiative, which appears to be virtually identical to the Energy Efficient Homes Program's "School Education" initiative. In both cases the school education kits "are provided at no additional cost."[2] The only apparent difference between the two is that the kits for the low income schools program contain a smart strip in addition to the measures contained in the residential schools program.

[1] Phase IV Final Implementation Order at 28.

[2] Energy Efficiency and Conservation Plan, p. 52 of 142 (pdf p.78) and p.62 of 142 (pdf p. 88).

2. The Companies state that their low income programs "will serve a dual purpose of contributing to Act 129 goal attainment and minimizing the percentage of household income that is devoted to energy costs";[3] yet they propose to offer certain measures to low income households that it is implausible to believe will be installed. These include measures such as "Pool Pump Variable Speed," "EV charging Cord – Level 2 – RES," and "Water Cooler." These measures will have almost certainly have no applicability for low income households.
3. The Companies state that they will provide "enhanced incentives for ENERGY STAR and other energy efficient appliances"[4] for low income customers; but rather than pay the full cost of such measures, they intend to require customers to contribute to the costs. It is unreasonable to assume that households earning 150% of the Federal Poverty Level ("FPL") can be expected to contribute to measure costs.
4. The Companies seem to plan to offer higher incentives for more efficient appliances where multiple efficiency levels exist, yet the planned participation for low income customers is overwhelmingly greatest for level 1 clothes washers, refrigerators, and room air conditioners, even though installation of level 2 and level 3 appliances would result in more energy savings for these households.
5. The Companies' Plan provides a list of measures that are available through its low income programs in Table 14,[5] yet some of the listed measures are either not included in Appendix B, Table 8 at all (where participation estimates are recorded) or are only included with

[3] Id. at p. 14 of 142 (pdf p. 40).

[4] Id. at p. 57 of 142 (pdf p. 83).

[5] Id. at p. 137 of 142 (pdf p. 163).

remarkably low participation estimates. For example, Table 14 lists "Heat Pump Water Heater" as a low income measure when Appendix B, Table 8 shows that West Penn only plans for a single installation in each year of its Plan. Merely saying that a measure is available is meaningless when the Companies do not provide participation estimates that indicate they will promote it.

6. The Companies intend to implement their Act 129 Phase IV low income programs in a coordinated manner with their LIURP programs, which should lead to administrative efficiencies and potentially increased savings for those households who receive these services – yet too little emphasis is placed on these comprehensive energy saving initiatives compared with the Behavioral Savings, School Education, and other low-impact measures that comprise the majority of low income savings for the Companies.

Q. What are your recommendations for the Commission?

A. In order to improve the availability of meaningful energy efficiency opportunities for the Companies' low income customers, I recommend the Commission take the following steps prior to its approval of the Companies' Plan:

1. Disallow the Companies from counting savings from their "School Education – LI" program towards their LI savings requirement, and replace those savings by directing the Companies to double the planned participation levels in the "Weatherization (Warm Plus)" and "Warm Extra Measures" programs.
2. Direct the Companies to prioritize the highest levels of equipment efficiency when varying levels are available (such as with clothes washers and refrigerators) in order to provide low income program participants with the greatest level of savings.

3. Direct the Companies to eliminate all requirements for contributions to measure costs from low income households and to re-calculate their planned LI savings to include only measures that can plausibly be expected to be installed by low income households.
4. Direct the Companies to target replacement of electric resistance heating and water heating with heat pumps and heat pump water heaters in qualifying households, such that LI-appliance savings, including these measures, is equivalent to 10% of the Companies' low income savings.
5. Direct the Companies to increase savings from multifamily low income housing, including both master-metered and split-metered properties.

II. BACKGROUND OF ACT 129 PROGRAMMING

Q. Please summarize the low income energy savings requirements for Phases I, II, III, and IV of Act 129.

A. Act 129 requires that each Electric Distribution Company (EDC) include in its Energy Efficiency and Conservation Plan specific energy efficiency measures for low income households in proportion to that sector's share of the total energy usage in a given service territory.[6] The Commission enforced this statutory requirement for all Phase I EDC Plans, but did not require EDCs to achieve a specific percentage of overall consumption savings from the low income sector.

In Phase II, the Commission continued to require that each plan include specific measures for low income households in proportion to the sector's percentage of usage. In addition, the Commission required that each EDC obtain a minimum of four-and-a-half percent (4.5%) of its

[6] 66 Pa. C.S. §2806.1(b)(1)(i)(G).

overall consumption reduction requirements from the low income sector.[7] Eligibility for the Phase II low income sector programs was limited to low income households; however, low income customers could participate in any general residential program. To determine whether an EDC met its 4.5% target, the Commission allowed EDCs to include all savings achieved through dedicated low income programs, as well as a portion of savings achieved through non-low income programs based on estimated low income participation.[8]

In Phase III, the Commission again continued implementation of the statutory measure requirement, and increased the low income consumption reduction requirement from four-and-a-half percent (4.5%) to five-and-a-half percent (5.5%) of the overall savings achieved.[9] In calculation of Phase III compliance, the Commission provided: "Savings counted towards the 5.5% target may only come from specific low income programs or low income verified participants in multifamily housing programs. Savings from non-low income programs will not be counted for compliance."[10] In addition to the specific savings carve-out, the Commission further directed that "low income savings should primarily come from measures that are directly provided to low income households."[11]

For Phase IV, the Commission again increased the minimum low income savings requirement from 5.5% to 5.8% of total consumption reduction, and maintained its requirement from Phase III that low income savings be derived from programs "solely directed at low income

[7] Phase II Implementation Order at 55.

[8] Id. at 58.

[9] Phase III Implementation Order at 69.

[10] Id. at 69.

[11] Id. at 69.

customers or low income verified participants in multifamily housing programs."[12] In setting the low income savings requirement, the Commission reiterated that the 5.8% savings requirement is drawn from the Statewide Evaluator's assessment of program potential, "which is significantly below the maximum achievable potential."[13] For the Companies in total, the percentage low income savings requirement equates to 89,015 MWh.[14]

Table 1: First Energy Low Income Savings Targets

Met-Ed	26,866 MWh
Penelec	25,385 MWh
Penn Power	7,477MWh
West Penn	29,287 MWh
Total	**89,015 MWh**

Notably, while the 5.8% savings requirement is higher in terms of the percentage of overall savings, the actual MWh savings requirement from the low income customer segment is lower than in Phase III because the overall portfolio savings targets are lower, "due to the higher portfolio-level acquisition costs used to set the Phase IV targets."[15] This is an important point to keep in mind generally in assessing the adequacy of the Companies' proposed Phase IV Plan as a whole, and specifically the adequacy of their proposed low income programs. Indeed, the Commission explained that the overall portfolio savings requirements were established based on higher acquisition costs for two primary reasons:

[12] Phase IV Implementation Order at 28.

[13] Id. at 33.

[14] Id. at 35.

[15] Id. at 36.

> First, a sizeable share of low-cost savings in prior phases have been driven by residential lighting measures, which are expected to play a very limited role in Phase IV and were modeled as such. Second, though the Commission acknowledges it is possible to design programs that capture savings at a lower average acquisition cost in Phase IV than modeled by the results of the [potential study], directing the EDCs to do so would be in contravention of the Commission's stated encouragement for EDCs to pursue comprehensive portfolios with a greater focus on longer-lived, deeper-savings measures. The [potential study] included a comprehensive mix of measures to reflect this Commission position."[16]

On this last point encouraging EDCs to pursue "comprehensive portfolios with a greater focus on longer-lived, deeper-savings measures", the Commission "strongly encourage[d] EDCs to submit EE&C plans that adhere to this recommendation and encourage[d] stakeholders to engage in proceedings related to those plans."[17]

Regarding coordination of Act 129 and the utilities' Low Income Usage Reduction Programs, the Commission "encourages stakeholders to consider more comprehensive proposals describing the nature, structure, and implications of potential alternate approaches to coordination in future proceedings."[18] I take that to mean proposals for enhanced coordination of Act 129 and LIURP should be considered in the instant proceeding.

With regard to multifamily savings, the Commission declined to require a specific multifamily savings carve-out, but directed the EDCs "to report savings achieved in multifamily housing, both for the low income carve-out and for their portfolio programs."[19] The Commission reiterated its direction from Phase III "that savings from multifamily housing, up to the percentage

[16] Phase IV Implementation Order at 15.

[17] Id. at 15.

[18] Id. at 37.

[19] Id.

of verified low income households living in the multifamily housing, are eligible for the low income carve-out."[20]

III. THE NEED FOR LOW INCOME ENERGY EFFICIENCY

Q How many low income customers do the First Energy Companies have?

A. This is a difficult question to answer precisely at this point in time due to the economic effects of the COVID-19 pandemic – however, it is clear that low income customers make up a very large portion of the Companies' overall customer base. The Commission publishes data about the Companies' low income customers annually in its Universal Service Report; however, the most recent report only includes data through 2019, prior to the onset of the COVID-19 pandemic.[21] Unfortunately, the economic landscape has and continues to change drastically as a result of the pandemic, which has likely caused a substantial increase to the number of low income households in the Companies' service territory.[22]

Q. Given the changing economic landscape, what is it possible to say about how many low income customers the Companies currently have?

A. EDCs report their low income customer population two ways: estimated low income customers and confirmed low income customers.[23] The "estimated low income" customer number

[20] Phase IV Implementation Order at 37.

[21] See Pa. PUC, BCS, 2019 Report on Universal Service Programs & Collections Performance, at 4 (Dec. 2019) (herein 2019 Universal Service Report), available at: https://www.puc.pa.gov/General/publications_reports/pdf/EDC_NGDC_UniServ_Rpt2019.pdf.

[22] See Kris Maher and Eric Morath, Pennsylvania, With Most Jobless Claims in U.S., Could Foretell High Numbers Elsewhere, Wall Street Journal (March 27, 2020), available at https://www.wsj.com/articles/pennsylvania-with-most-jobless-claims-in-u-s-could-foretell-high-numbers-elsewhere-11585323969; see also Pa. Office of Unemployment Compensation, UC Claim Statistics, https://www.uc.pa.gov/COVID-19/Pages/UC-Claim-Statistics.aspx.

[23] 2019 Universal Service Report at 4-6.

is derived using local census data, scaled against residential customer counts in a given geographic area, to approximate the percentage of low income households in a utility's service territory.[24] The "confirmed low income" number is a count of those customers for whom the Companies have obtained information that would reasonably indicate that their income is at or below 150% of the federal poverty level (FPL).[25] In 2019, the Companies reported 1,779,077 total residential customers, of which 465,005 (26.1%) were estimated low income and 259,421 (14.6%) were confirmed low income.[26] Thus, it is likely that between 14.6% to 26.1% of the Companies' residential customers were low income customers before the onset of the pandemic. The pandemic has caused much economic struggle throughout the Companies' service territory and the impact continues to grow at this time.

Table 2: First Energy Companies Low Income Customer Counts[27]

EDC	Residential Customers	Confirmed Low income	Estimated Low income
Met-Ed	504,684	73,647 -- 14.6%	116,570 -- 23.1%
Penelec	500,877	91,350 -- 18.2%	155,072 -- 31.0%
Penn Power	146,017	20,221 -- 13.8%	35,872 -- 24.6%
West Penn	627,499	74,203 -- 11.8%	157,491 -- 25.1%
Total/Avg.	***1,779,077***	***259,421 – 14.6%***	***465,005 – 26.1%***

Q. You say above that the Universal Service Reports may not capture all of the Companies' low income customers. Do you mean that the Companies have more low income customers than are reported?

A. Yes. Since these data only reflect the subgroup of customers that the Companies have confirmed meet its definition of low income, many low income customers are not included. The

[24] Id. at 6.

[25] Id. at 2.

[26] Id. at 5, 7.

[27] Id. at 4-6.

actual number of low income customers is estimated to be significantly higher – and due to the pandemic, there is little doubt that the number is growing. As such, the number of households in poverty who are terminated and without gas service each year is likely to grow.

Q. How much income must a household receive each month to be considered low income?

A. With some exceptions, most utility assistance programs require households to have income that is not greater than 150% of the federal poverty level ("FPL") to qualify. The FPL is a measure of poverty based exclusively on the size of the household, but not the composition of the household (i.e., whether the household consists of adults or children) or geography. Under current federal guidelines, a family of four at 150% FPL would have a gross annual income of just $39,300, while for a family of four at 50% FPL the number would be just $13,100.[28] For context, a full time (40 hour/week) worker making minimum wage ($7.25/hour) would have a gross annual income of $15,080, assuming no time off. This is substantially less than a household needs to meet their basic expenses.[29] For reference, the self-sufficiency standard (the income needed to afford basic needs without assistance) for Pennsylvania for a family of four with two adults, one preschooler, and one school aged child is $65,155.[30] Thus, a similarly situated family with income at 150% FPL would need to come up with an additional $25,855 just to afford necessary expenses. Thus,

[28] U.S. Dept. of Health and Human Services, 2020 U.S. Federal Poverty Guidelines, available at https://aspe.hhs.gov/2020-poverty-guidelines.

[29] See PathWays PA, Overlooked and Undercounted 2019 Brief: Struggling to Make Ends Meet in Pennsylvania, available at: http://www.selfsufficiencystandard.org/Pennsylvania

[30] See Pennsylvania Self Sufficiency Standard, http://www.selfsufficiencystandard.org/Pennsylvania (The Self Sufficiency Standard is a tool that measures the income that a family must earn to meet their basic needs and consists of the combined cost of 6 basic needs – housing, child care, food, health care, transportation, and taxes – without the help of public subsidies.).

these families are forced, on a monthly basis, to make impossible choices between necessary goods and services such as utility service, rent, food, and medicine.

In its 2019 Universal service Report, the Commission acknowledges that low income consumers in Pennsylvania often have income below 150% of FPIG.[31] The report states:

> According to the U.S. Bureau of Labor Statistics, the definition of a "working poor" household begins with a wage-earner who works full time (35+ hrs/week) at a minimum-wage job. In 2019, minimum wage in Pennsylvania was $7.25 per hour, the same as it has been since 2009. Annual income for an individual wage earner who works at a full time (40hr/week) minimum-wage job is $15,080, which equates to 121% of FPIG in 2019 and 118% FPIG in 2020.[32]

For all 2019 participants in universal service programs statewide, average annual household income **for electric customers was $14,594**.[33] The average electric CAP household (two persons) had an income of $14,387, which placed these households' incomes at approximately 85% of FPIG (for two persons) for 2019, and 83% for 2020.[34] Electric customers who received LIURP services in 2019 had average annual household incomes of $17,947.[35]

Q. Has the Commission studied energy affordability as it relates to low income households?

A: Yes. In 2019, the Commission published a statewide home energy affordability analysis, wherein it evaluated the relative energy burdens (the percentage of a household income dedicated to energy costs) among low income and non-low income households.[36] The Commission found

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[31] 2019 Universal Service Report at 44.

[32] Id.

[33] Id.

[34] Id.

[35] Id. at 41.

[36] Energy Affordability for Low income Customers, Docket No. M-2017-2587711 (*Energy Affordability* proceeding), (Order entered January 17, 2019) available at: http://www.puc.pa.gov/pcdocs/1602386.pdf.

that even with discounted CAP payments, many low income customers still had disproportionate energy burdens to those paid by non-low income households.[37] The Commission's findings were consistent with the findings of the annual Home Energy Affordability Gap report, which has consistently indicated that customers in the lowest income tier often have energy burdens in excess of 30%, while energy burdens for non-low income households are consistently around 4%.[38]

Q. What does this mean?

A: The overwhelming energy burden on low income households makes it difficult to pay for other basic necessities such as housing, food, and medicine; threatens stable and continued employment and education; has substantial and long-term impacts on mental and physical health; creates serious risks to the household and the larger community; and negatively impacts the greater economy.[39] According to the US Energy Information Administration, roughly 1 in 5 households in 2015 – when the economy was experiencing a relatively prosperous economic period – reported that they reduce or forego other critical necessities like food and medicine to afford their home energy costs, and more than 1 in 10 reported keeping their home at an unsafe or unhealthy temperature.[40] Even with financial assistance, low income households are still unable to afford the cost of energy. According to a survey conducted by the National Energy Assistance Directors' Association, 72% of LIHEAP recipients reported that they forego other necessities to afford

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[37] Id. at 5-6.

[38] See Id.; See also Fisher, Sheehan & Colton, The Home Energy Affordability Gap: Pennsylvania (April 2019), http://www.homeenergyaffordabilitygap.com/03a_affordabilityData.html

[39] US EIA, Residential Energy Consumption Survey (2015), https://www.eia.gov/consumption/residential/reports/2015/energybills/; see also NEADA, 2018 National Energy Assistance Survey, at 17, 20 (Dec. 2018), http://neada.org/wp-content/uploads/2015/03/liheapsurvey2018.pdf (hereinafter NEADA Survey).

[40] US EIA, Residential Energy Consumption Survey (2015), https://www.eia.gov/consumption/residential/reports/2015/energybills/.

energy, and 26% reported keeping their home at unsafe or unhealthy temperatures.[41] Indeed, as recent research and data has continually showed, vulnerable low income families simply cannot afford the cost of energy services.

Q. Is there other evidence that the Companies' low income customers struggle to afford service?

A. Yes. The Commission's Universal Service Reports shows that the Companies' confirmed low income customers are terminated for nonpayment at **more than double the rate** of non-low income customers. In 2019, the termination rates for the Companies' residential customers ranged between 2.9% to 5.2%, but for confirmed low income customers the termination rates were 13.0% to 15.2%.[42]

[41] NEADA Survey at 17, 20.

[42] 2019 Universal Service Report at 13.

Table 3: First Energy Companies Termination Rates[43]

EDC	Residential Customers	Confirmed Low income
Met-Ed	5.2%	19.2%
Penelec	4.2%	14.6%
Penn Power	2.9%	13.0%
West Penn	3.1%	15.2%

Confirmed low income customers are also more likely to be payment troubled. Despite making up only between 11.8% to 18.2% of residential customers, confirmed low income customers make up 61.4% to 69.2% of payment arrangements and 68.2% to 73.2% of payment troubled customers (defined as failing to maintain at least one payment arrangement).[44]

Table 4: First Energy Low Income Statistics[45]

	Residential Customers	Payment Arrangements	Payment Troubled
Met-Ed	14.6%	61.4%	68.2%
Penelec	18.2%	67.9%	73.2%
Penn Power	13.8%	65.1%	71.0%
West Penn	11.8%	69.2%	68.7%

Q. Has the pandemic worsened these struggles?

A. Yes. Customer arrearages have grown significantly since the onset of the COVID-19 pandemic.[46] Also, as a result of the deep economic impact of the pandemic, energy usage patterns in the short term have changed and may continue to change. Many Pennsylvanians who used to go to work and school every day now find themselves at home during the day, and are using more electricity at home as a result. While we do not yet know the extent of the impact on electric

[43] Id. at 4-6.

[44] 2019 Universal Service Report at 8-9.

[45] Id.

[46] See Public Utility Service Termination Moratorium – Modification of March 13, 2020 Emergency Order, Letter of Met-Ed, et. al., Docket No. M-2020-3019244 (filed Dec. 15, 2020).

consumption and the state's economy, energy efficiency programming is even more important for low income families who are most profoundly impacted by the economic repercussions of the pandemic.

Q. Do the Companies' respective customer assistance programs (CAP) alleviate these struggles?

A. CAP helps; however, CAP only reaches a small percentage of eligible customers. In 2019, only 50,998 of the Companies' customers were enrolled in CAP – this is just 19.7% of confirmed low income customers and 11% of estimated low income customers.[47]

Table 5: First Energy CAP Enrollment[48]

EDC	Number of CAP Customers	Percent of Confirmed-Low Income	Percent of Estimated Low income
Met-Ed	13,043	17.7%	11.2%
Penelec	18,287	20.0%	11.8%
Penn Power	3,976	19.7%	11.1%
West Penn	15,692	21.2%	10.0%
Total/Avg.	***50,998***	***19.7%***	***11.0%***

Thus, between 80.3% to 89% of low income customers are not enrolled in CAP and are charged the full residential rate.

Q. What is the relationship between energy efficiency and CAP?

A. CAP costs are recovered through a rider assessed to all customers; thus, lowering energy costs for CAP participants brings down the cost of service for other ratepayers.[49] In its Phase IV

[47] 2019 Universal Service Report at 50.

[48] Id.

[49] Met-Ed Tariff Electric-Pa. P.U.C. No. 52 (Supp. 56) at 110-111;
Penelec Tariff Electric Pa. P.U.C. No. 81 (Supp. 61) at 117-118;
Penn Power Tariff Electric Pa. P.U.C. No. 36 (Supp. 48) at 106;

Final Implementation Order, the Commission acknowledged this potential stating, "[t]he Commission agrees with CAUSE-PA that low income programming has the potential to reduce universal service and uncollectible expenses, particularly if EDC programs target more comprehensive measures within the low income sector."[50] Additionally, CAP participants can be removed from the program due to year-over-year usage spikes.[51] CAP customers also have a limited amount of CAP credits, which is the dollar amount of the discount given to the customer (i.e. the difference between the full rate and the discount rate). Customers that expend their maximum CAP credits too soon due to high usage must pay the full rate until the credits reset.[52] Thus, providing comprehensive and effective EE&C programing to CAP customers helps them to afford their bills and helps control costs for all ratepayers.

Q. Do the Companies' respective Low Income Usage Reduction Programs (LIURP) satisfy the need for low income energy efficiency programming?

A. LIURP is a vital program, but it cannot, by itself, satisfy the need for low income energy efficiency programing. While there are substantial similarities between Act 129 and LIURP, each of the two programs provides distinct and important benefits to low income households. Specifically, Act 129 programs allow any low income household to access energy efficiency measures without being subject to the LIURP minimum usage thresholds. This benefit is particularly important for low income residents in multifamily buildings and small single family homes, who may have relatively high usage but may not meet the usage threshold to qualify for

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West Penn Power Tariff Electric Pa. P.U.C. No. 40 (Supp. 44) at 156.

[50] Phase IV Final Implementation Order at 105-106.

[51] First Energy, Amended Joint Universal Service & Energy Conservation Plan 2019-2021 at 11-12.

[52] Id. at 12

LIURP.[53] LIURP, on the other hand, is specifically designed to target the very highest users to help reduce collections and universal service costs.[54]

Thus, the Companies must be careful that coordination between Act 129 and LIURP programs does not compromise the integrity of the distinct program budgets. I understand from counsel that Act 129 requires that EDC's respective Act 129 low income expenditures to be *in addition to* LIURP expenditures.[55] It is thus critical that the integrity of each program be maintained – even as we move to harmonize the two programs to streamline services and delivery to low income consumers.

IV. PHASE IV LOW INCOME PROGRAMS

Q. Please summarize the Companies' low income offerings in its proposed Phase IV Plan.

A. The Companies are proposing a Low income Energy Efficiency Program, which they state offers basic, enhanced, and comprehensive services and education.[56] The Companies propose to provide home energy efficiency kits, school education, and customized home energy reports providing low income customers with basic energy savings measures and/or energy efficiency education, recommendations, and information regarding other services upon which they can act.[57] The Companies also propose low income program offerings designed to help identify new low income customers, achieve additional energy savings opportunities, or promote energy efficiency

[53] Id. at 19 (First Energy generally requires a minimum usage threshold of 6,500 kWh or more annually).

[54] See Id.; see also 52 Pa. Code § 58.1.

[55] 66 Pa. C.S. § 2806.1(b)(i)(G).

[56] First Energy St. 2 at 12-13.

[57] Id.

in multifamily or other low income homes.[58] The Companies also plan to achieve additional new and incremental electric energy savings through the Weatherization subprogram as part of the delivery of the Companies' existing comprehensive Low income Usage Reduction Program ("LIURP"). [59] The Low income Energy Efficiency Program also includes a New Homes subprogram, where the Companies state they will promote the construction of new energy efficient housing for income-qualified customers.[60]

Q. From which program types or measures do the Companies propose to obtain the majority of their low income savings?

A. The Companies propose to obtain a disproportionate amount of savings from behavioral savings, school education, energy efficiency kits, and other low-impact measures that comprise the majority of low income savings for the Companies. The Companies place only modest emphasis on comprehensive energy saving initiatives.

Q. Is the Companies' Plan consistent with Commission direction to "increase their focus on more comprehensive measures."[61]

A. No. The Companies are over-reliant on "light-touch" measures that reach a large number of customers but fail to achieve the savings for individual customers that the Commission asked for. I provide more information on the makeup of the Companies' low income portfolio in the discussion below.

[58] Id.

[59] Id.

[60] Id.

[61] Phase IV Final Implementation Order at 7.

WEATHERIZATION AND LIURP COORDINATION

Q. What is your understanding of the Companies approach to Act 129 low income program coordination with its LIURP programs?

A. As I understand the explanation of program coordination provided by Mr. Miller at an informal discovery conference on January 8, 2021, the Companies' Weatherization (WARM PLUS) and WARM Extra Measures program subcomponents are delivered in an integrated manner with the LIURP program. The Companies utilize the same program delivery contractors and agencies in a manner that streamlines the process for customers and provides for more measures to be installed than might otherwise be the case if LIURP was the only funding stream used.

Q. What is your understanding of how Act 129 funding is utilized in the Weatherization (WARM PLUS) subprogram?

A. As explained by Mr. Miller, Act 129 funding is used for income-eligible customers who do not meet the LIURP high usage criterion to deliver effectively identical services to what is delivered to LIURP-eligible customers. As Mr. Miller explained, the delivery is provided by the same contractors and agencies, and the measure lists are the same. In my view this is an effective approach because it should deliver high-value, comprehensive measures that provide significant bill reductions to participating low income households. In fact, for West Penn, the Companies estimate that participants will on average save 1,441 kWh per year,[62] which is worth about $160 per year.[63] Further, it does so in an administratively efficient manner by using the same program delivery infrastructure that is already in place for LIURP.

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[62] First Energy EE&C Plan, Append. B, T8: Estimated Savings and Participation, West Penn.

[63] Average price of $0.1110/kWh EIA Table 6 2019 Utility Bundled Retail Sales-Residential. https://www.eia.gov/electricity/sales_revenue_price/

Q. How does the WARM Extra Measures program sub-component differ from the Weatherization (WARM PLUS) Program sub-component that you describe above?

A. As explained by Mr. Miller, the WARM Extra Measures program sub-component increases the number of measures received by customers who are eligible and receive LIURP energy efficiency program services. In effect, Act 129 funds are used to provide even more bill savings to these customers than they would receive simply through LIURP – on average 818 kWh per year in additional savings, worth approximately $91 per year. [64]

Q. Do you support the Companies' approach in these program sub-components?

A. Yes. I think that coordinated delivery provides a cost-efficient means of delivering significant savings to the Companies' customers – by which I mean savings that are large enough to have a material effect on families' ability to meet their basic needs. This is in contrast to some of the other sub-components the Companies use to meet their Act 129 savings obligation that I believe are over-reliant on measures that are not comprehensive and that do not deliver meaningful savings to participating low income households. For this reason, I recommend the Commission direct the Companies to increase the investments they propose to make in these sub-components by a large margin, equivalent to a doubling of the sub-component budgets compared with what the Companies have proposed.

[64] Average price of $0.1110/kWh EIA Table 6 2019 Utility Bundled Retail Sales-Residential. https://www.eia.gov/electricity/sales_revenue_price/ .

LOW INCOME PROGRAMS THAT FAIL TO DELIVER MEANINGFUL SAVINGS TO CUSTOMERS

Q. What is an example of a program sub-component that you believe does not deliver meaningful savings to low income households?

A. The Companies' Behavior program sub-component is one example of a program that the Companies use to make a significant contribution to meeting the Act 129 low income savings requirement, without providing significant savings to the average participant. West Penn, for example, estimates that on average a participant in the Behavioral – LI sub-component will save between 50 kWh to 113 kWh per year[65] (depending on the program implementation year). This would reduce that participant's bill by between $5.55 and $12.54 per year, or on average about seventy-five cents per month. [66] While any bill savings for low income customers are worth pursuing, I believe that savings at this level are unlikely to materially change households' ability to pay their energy bills or increase their access to other necessities such as food and health care.

Q. Can you provide another example of a program sub-component that the Companies rely on for significant contributions to their required low income savings goal, yet that does not provide significant savings to individual households that participate?

A. Yes. I believe that the School Education – LI program provides savings opportunities that are too limited. The Companies indicate that the average expected savings for a participant in this program would be 211 kWh per year. Consistent with my statements above in which I suggest the Companies are not adequately providing significant savings opportunities for their LI customers,

[65] First Energy EE&C Plan, Append. B, T8: Estimated Savings and Participation, West Penn.

[66] Average price of $0.1110/kWh EIA Table 6 2019 Utility Bundled Retail Sales-Residential. https://www.eia.gov/electricity/sales_revenue_price/

I would argue that here, too, while any savings are worth pursuing, the savings in this program are too small to materially improve the condition of low income households that participate.

Q. Do you have other concerns with the School Education – LI program?

A. As I indicated in my introductory comments, I disagree with the Companies' position that savings from the School Education – LI program should be counted towards its low income savings requirement. I disagree with the premise that when the School Education program takes place in schools that are believed to serve significant numbers of students from low income households those savings should be considered to be low income savings. I believe to do so would contradict the spirit and the letter of the Commission's Phase III Order in which it rejected the Phase II practice of allocating savings from non-specific LI programs toward meeting its low income requirements based on assumptions of low income participation. I believe this because, as far as can be told from the Companies' filing, the School Education – LI program is no different than the School Education program within the Energy Efficient Homes Program, other than that it is larger.

Q. What would the benefit be for customers if the Commission were to adopt your recommendation that the School Education – LI program not be counted towards the LI savings requirement?

A. If the Commission adopted my recommendations to both disqualify the savings from the School Education – LI program and require the Companies to make up the difference by doubling the savings they obtain through the Weatherization (WARM PLUS) and WARM Extra Measures programs, more low income households would receive the kinds of energy savings and bill reduction benefits that could materially reduce their financial insecurity, allowing them to better meet family needs for food and health care, for example. I believe this would more closely reflect legislative intent and the Commission's directions with respect to low income energy savings. And of course, there is nothing that should preclude the Companies from continuing to offer the School Education program for schools in lower-income communities – they would just need to report the savings in the school education program that is implemented more broadly.

Q. Can you provide other examples of program sub-components where the Companies fail to maximize savings for their low income customers?

A. Yes. It appears, for example, that the Companies intend to offer three different levels of efficient clothes washers and refrigerators to its low income customers. Unfortunately, they appear to plan for the vast majority of these to be at the lowest efficiency level rather than at the highest. The Companies estimate that the average participant will save 117 kWh per year for a level 1 clothes washer and 178 kWh per year for a level 3 clothes washer – yet for West Penn they estimate only one level 3 incentive per year, in contrast to 80 level 1 incentives.

Q. Surely there must be a reason that the Companies assume that virtually all of their clothes washer incentives for low income customers will occur at level 1?

A. I do not know the specific costs of the various efficiency levels for clothes washers used in the Companies' analysis, but assume they justify this planning assumption on the basis of presumed higher costs for more efficient appliances. However, in my considerable experience implementing low income energy efficiency programs, I always held it to be a fundamental goal to maximize per household savings whenever possible. Even if a level 3 appliance costs more than a level 1 appliance, it will not cost more than the difference in purchase prices for the Company to install the highest efficiency model. This is because the "transaction costs" – those costs incurred in the operation of the program – will be identical. Opportunities such as this, where simple choices will lead to more savings for customers, should favor maximizing efficiency and thus the bill savings that customers obtain. I recommend the Commission direct the Companies to prioritize the highest levels of equipment efficiency when varying levels are available, in order to provide low income program participants with the greatest level of savings.

IMPLAUSIBLE LOW INCOME MEASURES

Q: Do the Companies propose low income measures that you believe will fail to deliver on their promise of "minimizing the percentage of household income that is devoted to energy costs"?

A: Yes, the Companies propose several measures that they cannot rationally believe are applicable to low income customers. For example, it is almost impossible to see how a family with household income at or below 150% of FPL would be in the market for an "EV Charging Cord – Level 2 – RES." While it seems unlikely that income-eligible households will be purchasing new vehicles at all, the idea that they will have the discretionary income to choose a new electric vehicle is baffling. This notion is even more absurd when the Companies estimated incremental cost of $500 is compared with the "modeled rebate" of only $80.[67]

Q. Why would the Companies include this level 2 EV charging cord in their list of low income program measures?

A. I cannot guess as to why the Companies made this decision; however, I will observe that the effect is to artificially inflate the breadth and range of measures that are nominally available to low income households, though the benefit of doing so is unclear. In any event, these measures do not contribute to the minimization of energy bills for low income households.

[67] First Energy EE&C Plan, Append. D T2.

Q. The Companies state that they provide "Enhanced Incentives" for certain measures, implying that there is an expectation that low income customers could contribute to the costs of making energy efficient purchases. Are there additional measures that you have identified where the Companies expect low income customers earning less than 150% of FPL to pay a portion of the measure costs?

A. Yes. For example, Appendix B, Table 7: Eligible Measures indicates an incremental cost of $187 for an ENERGY STAR clothes washer, and an incentive of $50.[68] The clothes dryer measure shows an incremental cost of $358 and an incentive of $75.[69] It is simply implausible to think that low income customers would make such purchases, and the Companies reflect this to a degree in their very, very low estimated participation for such measures.

Q. What other measures do the Companies include for which they expect only limited participation?

A. A partial list of measures the Companies purport to be low income measures, with expected participation of only one customer per year, includes Clothes Washer – level 2, Clothe Washer – level 3, Refrigerator – level 2, Refrigerator – level 3, Water Heater, Pool Pump Variable Speed, Dishwasher, Water Cooler, EV Charging Cord – Level 2 – Res. It makes no sense that the Companies includes these as low income measures. In my view, doing so reduces transparency about what the Companies actually plan to implement for their low income customers by artificially inflating the number of measures they propose to offer.

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[68] First Energy EE&C Plan at Append. B, T7

[69] Id.

Q: Do these types of measures further the goals of Act 129 low income programing?

A: No. In its Final Implementation Order, the Commission indicated that the low income carve-out is designed to, "ensure that low income customers are able to access and participate in EDCs' efficiency programs."[70] I do not believe that it is plausible that low income customers will be able to access or participate in any of the measures I describe above. Thus, the Company should not be allowed to count the savings from these measures toward its low income savings goal, unless the programs are adjusted so that a substantial number of low income customers are able to participate.

MULTIFAMILY

Q. Do the Companies place a sufficient focus on providing savings opportunities for affordable multifamily housing?

A: I believe that the Companies needs to place a greater focus on ensuring the equitable provision of energy efficiency services to affordable multifamily housing. While the Companies do indicate that a non-trivial fraction of their total low income savings will come from direct install measures such as lighting when tenants are on residential accounts (8.0% for Penelec),[71] the fraction of savings coming from commercially metered low income housing units is small – in fact, it is virtually non-existent for tenants (less than 0.02% for Penelec).[72] Master-metered properties that provide affordable housing are critically important resources for low income families. These types of properties are disproportionately occupied by low income families and are underserved by energy efficiency programs due to landlord permission and cost sharing issues. Especially in light of the COVID-19 pandemic, many landlords of properties that house low

[70] Phase IV Final Implementation Order at 33.

[71] First Energy EE&C Plan at Append B, T8.

[72] Id.

income families are struggling themselves and are either unwilling or unable to pay for energy efficiency measures in tenant occupied properties. Thus, simply including master-metered properties in the pool of savings that count toward the low income carve-out is not enough to ensure that these properties are served effectively and comprehensively. Master-metered low income multifamily properties and those that have split metering, in which the living units are on individually metered residential accounts and the common areas are on commercial meters, need unique treatment by programs to ensure that they receive savings opportunities.

Affordable multifamily buildings are difficult to serve, and their operational budgets – especially in supportive nonprofit housing for seniors, veterans, and individuals with a disability – do not have room for building upgrades and improvements, such as energy efficiency projects. Without enhanced programming and reduced customer contributions, affordable multifamily owners and occupants are most often unable to access energy efficiency programming.

LOW INCOME SAVINGS LACK COMPREHENSIVENESS

Q. The issues you lay out paint a picture of the Companies' low income program that is not consistent with the Commission's directive for comprehensiveness – is it your opinion that the Companies fail in this regard?

A. Yes, I believe that the Companies' low income programs are inconsistent with the Commission's directives regarding comprehensiveness, and also inconsistent with the SWE's cost analysis that suggested reduced annual savings as a trade-off for more comprehensive, longer-lived savings. As illustrated in Table 6 below, using Penelec as an example, the Companies propose that less than a quarter of their low income savings will come from Weatherization measures. While there are encouraging signs regarding the Weatherization program, including estimates of large savings per participant, it is still worth noting that the specific measures that will make up the Weatherization savings are unknown and may include a significant portion of savings from lighting.

Table 6: Penelec LI Savings[73]

Program Category	% of LI Savings
Weatherization	22.6%
Appliance Recycling	10.1%
Appliances	1.4%
School Education kits and LI EE kits	36.3%
LI-Behavioral	15.3%
LI-multifamily-RES	9.5%
LI-multifamily-commercial	4.4%
LI-new construction	0.4%

Q. Which sources of low income savings in particular concern you?

A. It is my opinion that, other than the Weatherization programs, virtually all of the Companies' low income programs fail to include comprehensive savings that will provide material benefits to participants. 10% of the Plan low income savings come from appliance recycling in which functioning, but inefficient appliances are removed from low income households without a provision for replacing those appliances with more efficient ones. Indeed, barely more than 1% of the Plan low income savings come from appliance upgrades, and over 50% of the Plan low income savings come from the combination of the Behavioral program – primarily home energy reports – and energy efficiency kits. While not specified, it is also highly likely that the majority of the low income multifamily savings are from lighting, given that they are nearly all attributed to tenant direct install measures.

Q. If the Companies reach their low income savings requirement, why does it matter whether the savings meet the Commission's directive for comprehensiveness?

[73] First Energy EE&C Plan, Append B, T8.

A: The Companies' reliance on home energy reports, efficiency kits, and appliance recycling is indicative of their strong preference for short-term measures that provide limited savings to low income households. The Commission has made it clear that for Phase IV of Act 129 it wants the Companies to provide more focus on providing comprehensive measures that provide longer-lasting savings, including for low income households.[74] The Commission stated in its Phase IV Tentative Implementation Order:

> We note that the EE&C Programs have matured enough so that EDCs can **increase their focus on more comprehensive measures** which tend to require greater implementation timeframes.[75]

The Commission also stated that it:

> …proposes to require each EDC to obtain a minimum of 5.8% of its total consumption reduction target from the low income sector…from programs solely directed at low income customers or low income-verified participants in multifamily housing programs. Savings from non-low income programs, such as general residential programs, would not be counted toward these targets.[76]

The Commission echoes its preference for longer-lived measures in its discussion of demand savings targets when it says "because EE measures typically have multiple years of useful life, their associated incremental annual peak demand reductions will continue to provide value beyond the year in which they are claimed as incremental annual peak demand reductions in EE&C programs. The Commission prefers the lasting peak demand reductions achieved by EE measures."[77] In short, the Companies' programs as proposed do not meet the needs of their low income customers and do not comply with the directives of the Commission.

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[74] Phase IV Tentative Order at 8,17.

[75] Id. at 8.

[76] Id. at 17.

[77] Id. at 34.

RECOMMENDATIONS

Q. What are your recommendations to the Commission regarding approval of the Companies' Act 129 Phase IV Filing?

A. My overarching recommendation is that the Commission reject the Companies' Plan as filed and require them to amend the Plan to provide for a much greater focus on comprehensive, long-lived energy efficiency measures that will provide meaningful savings to participating low income households. To accomplish this I specifically recommend the following:

1. Disallow the Companies from counting savings from their "School Education – LI" program towards their LI savings requirement, and replace those savings by directing the Companies to double the planned participation levels in the "Weatherization (Warm Plus)" and "Warm Extra Measures" programs;
2. Direct the Companies to prioritize the highest levels of equipment efficiency when varying levels are available (such as with clothes washers and refrigerators) in order to provide low income program participants with the greatest level of savings;
3. Direct the Companies to eliminate all requirements for contributions to measure costs from low income households and to re-calculate their planned LI savings to include only measures that can plausibly be expected to be installed by low income households;
4. Direct the Companies to target replacement of electric resistance heating and water heating with heat pumps and heat pump water heaters in qualifying households, such that LI-appliance savings, including these measures, is equivalent to 10% of the Companies' low income savings; and
5. Direct the Companies to increase savings from multifamily low income housing, including both master-metered and split-metered properties.

Q. Does this conclude your Direct Testimony?

A. Yes.

CAUSE-PA ST. 1, ATTACHMENT A

RESUME OF JIM GREVATT

Jim Grevatt
Managing Consultant

ENERGY FUTURES GROUP

Professional Summary

Jim Grevatt has 30 years of experience in energy efficiency program planning and operations. At Energy Futures Group Jim has advised regulators, program implementers, and advocates in Florida, Louisiana, West Virginia, Colorado, Nevada, British Columbia, Manitoba, Maryland, Pennsylvania, Delaware, Virginia, New Jersey, Illinois, Iowa, Indiana, Mississippi, North Carolina, South Carolina, California, Vermont, Maine, Kentucky, and New Hampshire, and has provided expert witness testimony in twelve of those jurisdictions. Jim has hands-on experience with industry-leading approaches to designing and managing energy efficiency programs, including multi-family, low income, residential retrofit, new construction, HVAC, and efficient products programs. His in-depth knowledge of program operations and clear understanding of strategic thinking and planning ensure that programs achieve their desired market impacts. Throughout his career, Jim has focused on building strong relationships with staff, peers, trade allies, regulators, and clients as the best way to understand the needs and challenges that each sector faces. In past leadership roles at Efficiency Vermont, the DCSEU, and Vermont Gas, Jim had overall responsibility both for program design and operations. He was responsible for finding successful consensus approaches among diverse groups of partners and stakeholders, and for policy interactions with regulators, assuring that program processes were efficient and effective.

Experience

2013-present: Managing Consultant, Energy Futures Group, Hinesburg, VT

2012-2013: Director, Targeted Implementation, Vermont Energy Investment Corp., Burlington, VT

2011-2012: Director, Residential Energy Services, District of Columbia Sustainable Energy Utility
for Vermont Energy Investment Corp., Washington, D.C. and Burlington, VT

2010-2012: Managing Consultant, Vermont Energy Investment Corporation, Burlington, VT

2005-2010: Director, Residential Services, Vermont Energy Investment Corp., Burlington, VT

2001-2005: Manager, Energy Services, Vermont Gas Systems, S. Burlington, VT

1998-2001: Manager, Residential Energy Services, Vermont Gas Systems, S. Burlington, VT

1996-1998: Manager, HomeBase Retrofit Program, Vermont Gas Systems, S. Burlington, VT

1994-1996: Technical Specialist, Vermont Gas Systems, S. Burlington, VT

1991-1994: Associate Director and Technical Specialist, Champlain Valley Weatherization Program, Burlington, VT

Education

B.F.A., University Honors, University of Illinois, 1982

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Selected Projects

- The Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania ("CAUSE-PA"). Provided expert witness testimony in Philadelphia Gas Works Petition for Approval of Demand-Side Management Plan for FY 2016-2020. (2020)
- Appalachian Voices and Natural Resources Defense Council. Provided expert witness testimony in Virginia Electric and Power Co. Phase VIII DSM Program Application. (2020)
- Citizens Action Coalition of Indiana. Provided expert witness testimony in Duke Energy Indiana 2020-2023 DSM Plan. (2020)
- The Consumers' Association of Canada (Manitoba) and Winnipeg Harvest. Provided expert witness testimony in the Efficiency Manitoba 2020/23 Efficiency Plan proceeding. (2019-2020)
- British Columbia Sustainable Energy Association. Provided expert review, discovery, and evidence in DSM-related aspects of multiple proceedings with Fortis BC, BC Hydro, and FEI. (2017-2020)
- Southern Environmental Law Center. Provided technical support to environmental and social justice advocates in the Carolinas, and ongoing participation in the Duke Energy EE Collaborative (2019-2020) and Dominion South Carolina EE Advisory Group (2020).
- Coalition of Maryland Energy Efficiency Advocates. Prepared written comments and multiple appearances before the Commission to present evidence regarding Maryland utilities' 2015-2017, 2018-2020, and 2021-2023 EmPOWER Maryland energy efficiency plans, and in additional proceedings related to utility goal setting, cost-effectiveness testing, best-practices in low-income programs, and energy efficiency financing. (2014-2020)
- Southern Alliance for Clean Energy and Earthjustice. Provided expert witness testimony in the Florida Energy Efficiency and Conservation Act goal setting proceeding. (2019)
- Energy Efficient West Virginia, West Virginia Citizen Action Group, and Earthjustice. Provided expert witness testimony in Appalachian Power Company and Wheeling Power Company's Petition regarding EE/DR program approvals. (2019)
- Alliance for Affordable Energy and Natural Resources Defense Council. Provided expert technical support for Louisiana Public Service Commission EE Rulemaking and Entergy New Orleans DSM Plan. (2019-2020)
- New Jersey Clean Energy Program. Planning support for NJCEP implementation team. Facilitated focus groups, worked with Board of Public Utilities Staff, program administrators, utility companies, and other stakeholders to identify opportunities to improve NJCEP strategic direction and increase benefits for ratepayers. Lead author drafting strategic plan. (2015-2020)
- Natural Resources Defense Council and Sierra Club. Provided expert witness testimony in Public Service Company of Colorado's Strategic Issues, 2019-2020 DSM Plan, and 2021-2022 DSM Plan proceedings. (2017-2020)
- Natural Resources Defense Council and Sierra Club. Provided expert witness testimony in Nevada Energy Company's 2019-2038 Triennial Integrated Resource Plan and 2019-2021 Energy

Supply Plan, and 2019 and 2020 DSM Update proceedings and participated in stakeholder collaboratives. (2018-2020)

- Environmental Law & Policy Center and Iowa Environmental Council. Provided expert witness testimony in DSM proceedings regarding MidAmerican Energy Company's and Interstate Power and Light's 2019-2023 Energy Efficiency Plans. (2018)
- Pueblo County Colorado. Provided expert witness testimony in DSM proceedings regarding Black Hills Energy Company's 2019-2021 DSM Plan. (2018)
- Sierra Club. Provided expert witness testimony in proceedings regarding Kentucky Power Company's DSM programs and cost-effectiveness. (2017-2018)
- California Alternative Energy and Advance Transportation Financing Authority. Provide technical assistance on development of commercial energy efficiency financing pilot. (2017-2019)
- Energy Efficiency for All. Expert technical support for affordable multifamily energy efficiency advocacy in Pennsylvania and Virginia. Worked with a coalition of energy efficiency and affordable housing advocates to shape advocacy efforts with utilities and regulators. (2015-2020)
- Southern Environmental Law Center. Provided expert witness testimony in DSM proceedings with Duke Energy Progress and Dominion Virginia, as well as technical support for SELC staff regarding pre-pay programs and other policy issues. (2015-2019)
- Regulatory Assistance Project. Researched and co-authored with Chris Neme: The Next Quantum Leap in Efficiency: 30 Percent Electric Savings in Ten Years, addressing program and policy questions related to doubling the best efficiency program results. (2016)
- Natural Resources Defense Council. Provided expert witness testimony in support of NRDC's intervention in Ameren Illinois' 2014-2016 energy efficiency plan. Testimony demonstrated that Ameren would be capable of capturing significantly greater efficiency savings than it had proposed. (2013)
- Regulatory Assistance Project. Expert technical support for DSM in China. Worked with various government agencies and grid companies, as well as advocacy organizations to provide technical support related to advancing DSM and energy efficiency in China. (2015)
- Vermont Public Service Department. Evaluation of Clean Energy Development Fund. Conducted interviews of staff and key stakeholders under contract to NMR and prepared memo outlining process findings and recommendations. (2014-2015)
- Evaluation of Efficiency Maine Low-Income Multi-Family Weatherization Program. Responsible for program staff and building owner interviews and process evaluation under contract to NMR and Efficiency Maine. (2014-2015)
- Northeast Energy Efficiency Partnerships. Researched and co-authored meta-study of the use of energy efficiency to defer T&D investments. (2014)
- Northeast Energy Efficiency Partnerships- Researched and co-authored meta-study of ductless heat pump performance and market acceptance. (2014)
- New Hampshire Electric Co-op. Conducted assessment of the co-op's environmental and social responsibility programs' promotion of whole building efficiency retrofits, cold climate heat pumps and renewable energy systems. Presented recommendations to the co-op Board. (2014)

- High Meadows Fund. Co-authored a study assessing the market viability of “High Performance Homes” in Vermont. (2014)
- Energy Savings Potential Study, Delaware Department of Natural Resources. Led narrative development for the residential programs for a study of the energy efficiency savings potential in Delaware. (2013-2014)
- Regulatory Assistance Project. Provide technical support to energy efficiency advocates in proceedings in Maryland, Mississippi, and Missouri. (2013-2017)
- Better Buildings Solutions Center, U. S. Department of Energy. Energy Futures Group’s lead author in drafting and reviewing web content for ten how-to “handbooks” detailing proven approaches to designing and implementing residential retrofit efficiency programs. (2013-2014)
- Utility Program Benchmarking. Led research on behalf of a large IOU to compare the cost of saved energy across ~10 leading utility portfolios. The research sought to determine if there are discernable differences in the cost of saved energy related to utility spending in specific non-incentive categories, including administration, marketing, and EM&V. (2013)
- Research on trends in multi-family, HVAC, and new construction programs. Developed an analysis of emerging program trends on behalf of a leading energy efficiency industry firm. (2013-2014)
- Efficiency Power Plant, Regulatory Assistance Project. Partnered with RAP to develop a demonstration tool to show how energy efficiency measures can be used to mitigate air quality impacts related to power production. (2013)
- Natural Gas Energy Efficiency Analysis, the Green Energy Coalition. Provided analytical support to demonstrate in testimony that Enbridge Gas could reduce the scale of its proposed pipeline expansion by implementing aggressive energy efficiency programs. (2013)
- Targeted Implementation, VEIC. Responsible for market analysis and strategic planning for a new division expanding VEIC’s energy efficiency program implementation projects. (2012-2013)
- DC Sustainable Energy Utility. Led the planning and startup implementation of Residential programs for the DC SEU, including single and multi-family and retail market programs. Led the development of the initial portfolio-level Annual Plan. Led client and partner interactions around planning and policy development. Member of DC SEU Senior Management Team. (2011-2012)
- EmPOWER Maryland Critical Program Review. Expert consultant to the Maryland Office of Peoples’ Counsel in EmPOWER Maryland hearings regarding utility energy efficiency planning and reporting. Represented the OPC in stakeholder meetings that informed the current 2012-2014 EmPOWER plans. Multiple appearances before the Maryland Public Service Commission. (2010-2012)
- Efficiency Vermont 20 year Forecast of Efficiency Potential. Senior Advisor in developing the forecast scenarios that led to significantly increased efficiency investment in Vermont. (2010-2011)
- Efficiency Vermont Residential Programs. Directed 100% growth in program budgets to nearly $10M annually. Responsible for strategic direction, leadership, and results for Efficiency Vermont’s award-winning residential retrofit, new construction, retail, and low-income programs. Supported excellence in a staff of 30. (2005-2010)

Energy Futures Group, Inc
PO Box 587, Hinesburg, VT 05461 – USA | 802-482-4086 | jgrevatt@energyfuturesgroup.com

- Vermont Gas Systems Efficiency Program Leader. Directed strategic planning and program operations that led to six programs and portfolio as a whole being recognized as exemplary in Responding to the Natural Gas Crisis: America's Best Natural Gas Energy Efficiency Programs (ACEEE, 2003). Built contractor infrastructure and internal support to consistently meet program objectives. Led development of Annual Reports, planning and budgeting. Collaborated with Efficiency Vermont staff to develop a fuel-blind, state-wide, jointly offered residential new construction program. (2001-2005)
- Residential Retrofit Program Development. Enhanced design and performance of VGS' residential retrofit offerings by streamlining delivery and building strong relationships with contractors, homeowners, and property managers. (1994-2005)
- Demonstrated Technical Excellence in Approaches to Residential Retrofits. Conducted hundreds of residential energy audits and quality assurance inspections for natural gas and alternative-fueled homes. Trained and coached installers to obtain desired quality. Worked to satisfy homeowners through explanation, education, sound listening to concerns, and ultimately assuring that concerns were addressed. Trained new staff in auditing techniques. (1991-1998)

Selected Presentations

Keys to the House: Unlocking Residential Savings with Program Models for Home Energy Upgrades- ACEEE 2016 Summer Study on Energy Efficiency in Buildings, August, 2016

Home Upgrade Program Design & Implementation Models for Acquiring Savings in Multiple Climate Zones- 2016 National Home Performance Conference, April, 2016

EERS Advancements in Maryland: EmPOWER After 2015- Presentation at ACEEE Energy Efficiency as a Resource Conference, September, 2015

Leveling the Playing Field for Distributed Energy Resources- Panelist discussing the use of energy efficiency to defer T&D investments, Acadia Center forum on Envisioning Our Energy Future, February, 2015

Residential Retrofit Programs: What's Working? Perspectives from National Program Leaders- Panelist at AESP National Conference 2012

Elements of Retrofit Program Incentive Design- DOE Technical Assistance Program Publication, April, 2011

Designing Effective Incentives to Drive Residential Retrofit Participation- DOE Technical Assistance Program Webinar, October, 2010

Quality Assurance for Residential Retrofit Programs- DOE Technical Assistance Program Webinar, October, 2010

Home Performance with ENERGY STAR, Quality Assurance in Vermont- Panelist at the ACI Home Energy Retrofit Summit, April 2010

Delivering on the Promise-Engaging Communities and the Public- Panelist at 2010 NEEP Summit, March, 2010

Home Performance with Energy Star in Vermont - Presentation at CEE Member meeting, June 2009

Leading by Example: Exemplary Low Income Energy Efficiency Programs –Presented on Efficiency Vermont's Residential low income services at California's Low Income Energy Efficiency Symposium, June 2006

"Natural Gas Efficiency Policies, Responding to the Natural Gas Crisis One Therm at a Time" - Co-presented with Dan York and Anna Monis Shipley of American Council for an Energy-Efficient Economy (ACEEE) -ACEEE/CEE Market Transformation Symposium, 2004

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Joint Petition for Consolidation of Proceedings and Approval of the Phase IV Energy Efficiency and Conservation Plan of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company	: : : : : : :	Docket Nos. M-2020-3020820 M-2020-3020821 M-2020-3020822 M-2020-3020823

THE COALITION FOR AFFORDABLE UTILITY SERVICE AND ENERGY EFFICIENCY IN PENNSYLVANIA (CAUSE-PA) TESTIMONY VERIFICATION OF JIM GREVATT

VERIFICATION

I, Jim Grevatt hereby state that the facts set forth in CAUSE-PA St. 1, Direct Testimony of Jim Grevatt, are true and correct to the best of my knowledge, information, and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements made herein are subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsifications to authorities.)

February 4, 2021
Date

Jim Grevatt
Witness for CAUSE-PA

Via electronic service only due to Emergency Order at Docket No. M-2020-3019262

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petitions of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company for Approval of their Act 129 Phase IV Energy Efficiency and Conservation Plans	:	M-2020-3020820 M-2020-3020821 M-2020-3020822 M-2020-3020823

INTERIM ORDER
CONFIRMING ADMITTED EVIDENCE

An evidentiary hearing in this matter was held on February 5, 2021.

During the hearing, the following evidence was admitted into the record:

PARTY	NUMBER	DESCRIPTION	ASSOCIATED EXHIBITS
FIRST ENERGY COMPANIES	STMT 1	Direct Testimony of Kurt E. Turosky	
	STMT 2	Direct Testimony of Edward C. Miller	
	STMT 3	Direct Testimony of Anthony J. Woytko	AJW-1 through AJW-5
	STMT 2-R	Rebuttal Testimony of Edward C. Miller	ECM-1R
	STMT 3-R	Rebuttal Testimony of Anthony J. Woytko	AJW-1R through AJW-5R
	STMT 2-R (Supp)	Supplemental Rebuttal Testimony of Edward C. Miller	
	STMT 3-R (Supp)	Supplemental Rebuttal Testimony of Anthony J. Woytko	

OCA	STMT 1	Direct Testimony of Geoffrey C. Crandall	Schedules GCC-1 through GCC-4 and his Verification
	STMT 1-SUPP	Supplemental Direct Testimony of Geoffrey C. Crandall	Schedules GCC-Supp-1 and GCC-Supp-2 and his Verification
	Hearing Exhibit #1	OCA's answer to FE to OCA Set I, No. 3.	
CAUSE-PA	STMT 1	Direct Testimony of Jim Grevatt	Attachment A and his Verification
CAAP	STMT 1-R	Rebuttal Testimony of Susan A. Moore	Her Verification
INDUSTRIAL USERS GROUPS	HEARING EXHIBIT #1	FirstEnergy Companies' answers to MEIUG/PICA/WPPII to FE Set I, Nos. 5, 10, 15, and 16.	
PENN STATE	STMT 1	Direct Testimony of James L. Crist	His Verification
	STMT 1-R	Rebuttal Testimony of James L. Crist	

The Company's statements were admitted subject to the Company filing verifications by Monday, February 8, 2021. The Company timely filed the verifications. Therefore, the PPL statements are considered admitted.

THEREFORE,

IT IS ORDERED:

1. That, by **<u>4:00 p.m. on February 12, 2021</u>**, the parties shall file the admitted evidence, with appropriate verifications, with the Commission's Secretary's Bureau pursuant to 52 Pa.Code § 5.412a.

2. That the parties shall, when filing their evidence pursuant to Ordering Paragraph 1, include in each filing: (a) a copy of this Order, and (b) a cover letter referencing the caption and Docket Number of this proceeding, the specific evidence included in the filing, and the fact that the evidence included in the filing is "admitted evidence."

Date: February 9, 2020

/s/

Emily I. DeVoe
Mark A. Hoyer
Administrative Law Judges

M-2020-3020820, M-2020-3020821, M-2020-3020822, M-2020-3020823 JOINT PETITION FOR CONSOLIDATION AND APPROVAL OF THE ACT 129 PHASE IV ENERGY EFFICIENCY AND CONSERVATION PLAN OF METROPOLITAN EDISON COMPANY, PENNSYLVANIA ELECTRIC COMPANY, PENNSYLVANIA POWER COMPANY, AND WEST PENN POWER COMPANY

Revised 1/19/21

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