

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

**ELECTRONIC APPLICATION OF KENTUCKY)
POWER COMPANY FOR: (1) APPROVAL TO)
EXPAND ITS TARGETED ENERGY)
EFFICIENCY PROGRAM; (2) APPROVAL OF A)
HOME ENERGY IMPROVEMENT PROGRAM)
AND A COMMERCIAL ENERGY SOLUTIONS)
PROGRAM; (3) AUTHORITY TO RECOVER)
COSTS AND NET LOST REVENUES, AND TO)
RECEIVE INCENTIVES ASSOCIATED WITH)
THE IMPLEMENTATION OF ITS DEMAND-)
SIDE MANAGEMENT/ENERGY EFFICIENCY)
PROGRAMS; (4) APPROVAL OF REVISED)
TARIFF D.S.M.C.; (5) ACCEPTANCE OF ITS)
ANNUAL DSM STATUS REPORT; AND (6) ALL)
OTHER REQUIRED APPROVALS AND RELIEF)**

Case No. 2024-00115

TESTIMONY OF STACY L. SHERWOOD

ON BEHALF OF

**JOINT INTERVENORS MOUNTAIN ASSOCIATION,
APPALACHIAN CITIZENS' LAW CENTER,
KENTUCKIANS FOR THE COMMONWEALTH, AND
KENTUCKY SOLAR ENERGY SOCIETY**

August 21, 2024

**DIRECT TESTIMONY OF STACY L. SHERWOOD
ON BEHALF OF JOINT INTERVENORS
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY**

Case No. 2024-00115

Table of Contents

I. INTRODUCTION & QUALIFICATIONS	1
II. TESTIMONY OVERVIEW	3
III. PORTFOLIO OVERVIEW	8
IV. PROGRAM REVIEW AND RECOMMENDATIONS.....	23
A. Targeted Energy Efficiency Program	24
B. Home Energy Improvement Program.....	31
C. Commercial Energy Solutions Program	33
D. Additional Programmatic Recommendations	36
V. COST RECOVERY.....	41
A. Reviewing Case No. 2017-00097	43
B. Net Lost Revenues	50
C. Observations and Recommendations	52
VI. REPORTING RECOMMENDATIONS.....	57
VII. COLLABORATION RECOMMENDATIONS.....	58
VIII. CONCLUSION.....	61

Table of Exhibits

1. Exhibit SLS-1 – Stacy Sherwood Curriculum Vitae
2. Exhibit SLS-2 – Excerpted Report on Kentucky Power Company's 2022 Integrated Resource Plan
3. Exhibit SLS-3 – Connecticut Performance Management Incentives and Metrics
4. Exhibit SLS-4 – Mountain Association Energy Democracy Presentation

1 **I. INTRODUCTION & QUALIFICATIONS**

2 **Q. Please state for the record your name and business address.**

3 A. My name is Stacy L. Sherwood. My business address is 10298 Route 116, Hinesburg,
4 Vermont 05461.

5 **Q. By whom are you employed and in what position?**

6 A. I am a Principal at Energy Futures Group (“EFG”), a consulting firm that provides
7 specialized expertise on energy efficiency and renewable energy markets, program
8 design, power system planning, and energy policy. I provide technical assistance to
9 energy efficiency organizations, environmental advocates, utilities, and nonprofit
10 organizations to design, develop and implement policies and programs that maximize the
11 benefits of demand-side management (“DSM”).

12 **Q. On whose behalf are you testifying in this proceeding?**

13 A. I am testifying on behalf of Mountain Association (“MA”), Appalachian Citizens’ Law
14 Center (“ACLC”), Kentuckians for the Commonwealth (“KFTC”), and Kentucky
15 Solar Energy Society (“KYSES”) (collectively (“Joint Intervenors”)).

16 **Q. Please describe your educational background.**

17 A. I received a Bachelor of Arts degree in Accounting, Business Administration, and
18 Economics from McDaniel College in 2009.

19 **Q. Please describe your professional background.**

20 A. I have 15 years of experience in the energy sector, related specifically to the review and
21 development of energy efficiency and demand response programs and policies. In
22 October 2021, I joined Energy Futures Group as a Managing Consultant and became a

1 principal of the firm in 2024. Since 2022, I have served as the Lead Technical Consultant
2 to the Connecticut Energy Efficiency Board to support the state’s energy efficiency
3 programs. Prior to joining EFG, I was employed for six years by Exeter Associates, Inc.,
4 as a Senior Analyst where I provided technical support and analysis to state and federal
5 clients on energy efficiency, distributed resources, demand response, and renewable
6 energy.

7 From 2009 through 2015, I worked at the Maryland Public Service Commission as a staff
8 member with a focus on the regulatory review of Maryland’s energy efficiency programs,
9 known as EmPOWER Maryland. A copy of my curriculum vitae is attached as Exhibit
10 SLS-1.

11 **Q: Have you previously filed expert witness testimony in other proceedings before the**
12 **Commission or before other regulatory commissions?**

13 A: Yes. I have filed expert testimony regarding Economic Development Rider Special
14 Contracts with cryptocurrency mining facilities in three proceedings, and have filed
15 comments regarding energy efficiency planning and programs before the Commission.¹
16 Additionally, I have filed testimony before Commissions in Kansas, Kentucky,
17 Louisiana, Maine, Maryland, Missouri, Pennsylvania, and Rhode Island regarding

¹ Case No. 2022-00371, *In re Electronic Tariff Filing of Kentucky Utilities Company for Approval of an Economic Development Rider Special Contract with Bitiki-KY, LLC*; Case No. 2022-00387, *Electronic Tariff Filing of Kentucky Power Company for Approval of a Special Contract with Ebon International, LLC*; Case No. 2022-00424, *Electronic Tariff Filing of Kentucky Power Company for Approval of a Special Contract Under Its Economic Development Rider and Demand Response Service Tariffs with Cyber Innovation Group, LLC*; Case No. 2023-00092, *In re Electronic 2022 Integrated Resource Planning Report of Kentucky Power Company*. My comments regarding Kentucky Power’s evaluation of demand-side management resources in its most recent IRP proceeding are attached as Exhibit SLS-2. The exhibit excerpts the portion of Energy Futures Group’s larger comment on behalf of Joint Intervenors, which is available as part of the public record in Case No. 2023-00092.

1 automated metering infrastructure, energy efficiency programs, revenue requirement and
2 adequacy of service.

3 **II. TESTIMONY OVERVIEW**

4 **Q. What is the purpose of your testimony?**

5 A. My testimony addresses Kentucky Power Company's ("Kentucky Power" or "the
6 Company") application for approval of a DSM plan consisting of an expanded version of
7 its current Targeted Energy Efficiency ("TEE") program, as well as two new programs:
8 the Home Energy Improvement Program ("HEIP") and a Commercial Energy Solutions
9 Program ("CESP"). The Company is seeking authorization to update its DSM surcharge
10 (referred to as the D.S.M.C. tariff) to recover costs associated with implementing the
11 proposed DSM plan, net lost revenues, and incentives related to implementation of the
12 portfolio. My testimony will address: (1) the development of the portfolio, including a
13 review of the Market Potential Study, (2) the reasonableness of the proposed programs,
14 with recommended enhancements for the Company's and the Commission's
15 consideration, (3) recommendations to refine the cost recovery mechanism, including
16 incentives paid to the Company for the implementation of the portfolio, and
17 (4) recommendations to improve reporting and collaboration.

18 **Q. Please explain why it is important for utilities to invest in demand-side management
19 programs.**

20 A. Energy efficiency is one of the least expensive energy resources to invest in and provides
21 quantifiable benefits well beyond the costs to deliver the programs. When cost-effectively
22 implemented, energy efficiency programs provide a variety of benefits to ratepayers, the
23 utility, and the environment. First and foremost, energy efficiency can reduce demand

1 and overall energy usage for the participant, which can translate into savings for all
2 ratepayers through deferred investment in new electricity generation and infrastructure, at
3 both the distribution and transmission level. Reducing overall load and energy demand
4 can provide increased reliability, even more so if dispatchable demand response is
5 included in the portfolio, which is realized by both participants and non-participants.
6 Improved energy efficiency provides economic benefits, such as lower utility bills for
7 both participants, through direct participation, and for non-participants through the
8 stabilization of electricity prices. Furthermore, energy efficiency programs can promote
9 job creation in the area and influence trades, such as heating, ventilation, and air
10 conditioning, to train the workforce. Environmentally, the programs decrease greenhouse
11 gas emissions and other pollutants, as well as decrease the use of other resources, such as
12 water.

13 While there are direct benefits for those who participate in the programs, energy
14 efficiency programs can provide indirect benefits for all ratepayers. Both participants and
15 non-participants experience long term benefits of energy efficiency as it can reduce
16 overall electric demand and thus reduce or delay investment in new generation and
17 infrastructure.

18 **Q. Please summarize your recommendations.**

19 A. I support the Company's proposal to expand the DSM plan beyond the TEE program and
20 creating new opportunities for its customers to benefit from these critical cost-savings
21 programs. However, the proposed program investments are so modest that I am
22 concerned the DSM plan is unlikely to deliver the system benefits that come from

1 pursuing reasonable, achievable, and cost-effective savings potential, and that concern
2 implicates the reasonableness of the proposed investment.

3 While I support approval of a DSM plan for Kentucky Power, the Commission should
4 require Kentucky Power to revise its proposal to provide greater investment and
5 opportunities for program participation to increase benefits recognized by both
6 participants and non-participants. Many residential customers may be entirely or
7 substantially precluded from participating due to health and safety concerns, and
8 businesses, especially small businesses, may find it difficult to prioritize energy
9 efficiency investments due to high upfront costs. Ensuring non-participant benefits is also
10 extremely important in the Kentucky Power service territory due to the state of housing,
11 the lack of economic development, and the need to address future capacity shortfalls.

12 Overall, I recommend that the programs be expanded to allow for reasonable levels of
13 participation, closer to that proposed in the Company's Market Potential Study ("MPS").
14 An expanded portfolio, as provided in my recommendations throughout this testimony,
15 will increase the opportunity for all ratepayers paying into the DSM surcharge to
16 participate, even despite barriers and extensive wait lists. Furthermore, these
17 recommendations will increase the benefits recognized by non-participants and further
18 the efforts to achieve the Company's goal to defer supply-side investments and increase
19 reliability.

20 My recommendations are summarized below, grouped by overarching recommendations
21 to improve the plan as a whole, specific program recommendations, and cost-recovery
22 related recommendations.

1 **Overarching Recommendations:**

2 The Company should undertake to, and the Commission should require, the

3 following general adjustments:

- 4 1. Develop a three-year plan that ramps up to achieve 0.2% energy efficiency
- 5 savings as a percent of 2022 sales.

- 6 2. Explore financing opportunities and identify financing partners to support energy
- 7 efficiency projects for both residential and commercial customers.

- 8 3. Develop a new manufactured housing pilot during the three-year plan.

- 9 4. Provide a transparent and clear reporting process, based upon feedback from
- 10 stakeholders.

- 11 5. Develop guidelines related to collaborative process for discussing the DSM Plans.

12 **TEE Program Recommendations**

13 Regarding the TEE Program, the Commission should require the Companies to:

- 14 1. Work with the Community Action Agencies (“CAAs”) to determine health and
- 15 safety remediation cost estimates and reassess the sufficiency of Kentucky
- 16 Power’s funding contribution.

- 17 2. Reassess whether budget levels afford reasonable opportunities for income
- 18 eligible customers to participate in a residential energy efficiency program, and
- 19 evaluate ways to expand participation.

- 20 3. Target and prioritize customers with baseboard heating to receive high winter
- 21 efficiency heat pumps as a way to reduce a customer’s overall energy usage, as
- 22 well as the electric system’s winter demand.

23 **Home Energy Improvement Program Recommendations**

24 Regarding the Home Energy Improvement Program, the Commission should

25 require the Companies to:

- 26 1. Expand measure offering to include non-centralized equipment such as window
- 27 air conditioners and dehumidifiers, as a way to limit cost barriers to participate in
- 28 the program and to allow for participation by barriered homes.

- 1 2. Provide enhanced rebates for low-to-moderate income customers to broaden
2 accessibility.
- 3 3. Require all smart thermostats rebated under the program to be demand response
4 capable.

5 **Commercial Energy Solutions Program Recommendations**

6 Regarding the CESP, the Commission should require the Companies to:

- 7 1. Provide enhanced rebates for small business customers under the CESP to
8 eliminate cost barriers for participation.
- 9 2. Provide additional documentation to support the proposed program budget.

10 **Cost Recovery Recommendations**

11 The Commission should approve a cost recovery model that allows for:

- 12 1. Cost recovery for prudently incurred DSM Plan implementation costs;
- 13 2. Recovery of net lost revenues based on verified savings from measures funded by
14 the DSM Plan; and
- 15 3. Shared-savings incentives should be based on percentage achievement of goals
16 related to the program and not simply on offering of DSM programs.

17 **Stakeholder Collaboration Recommendations**

18 I recommend that the Company continue collaborating with the stakeholders, including
19 Joint Intervenors and other customer representatives, on the development and
20 implementation of its DSM programs. Specifically, I recommend the Commission direct
21 the Company to:

- 22 1. Begin stakeholder collaboration with an in-person workshop earlier in the process
23 of developing its next DSM Plan, in order to allow input from stakeholders to
24 meaningfully shape the plan.
- 25 2. Hold stakeholder meetings at least quarterly, with co-created agendas that (i)
26 setting shared goals, (ii) sharing inputs and assumptions for analyses, and
27 (iii) establishing timelines that allow for incorporation of feedback.

III. PORTFOLIO OVERVIEW

Q. Please provide an overview of the proposed portfolio.

A. Kentucky Power has proposed a three-year portfolio of consisting of three programs that are projected to achieve a cumulative 11,402 megawatt-hours (MWh) in energy savings and a cumulative 1.4 megawatts (MW) of summer demand reduction, and 1.9 MW of winter demand reduction. To achieve this level of savings, the Company projects that it will invest \$5.1 million over the three years, or an average of \$1.7 million per year.

Table 1. Kentucky Power Proposed 2025-2027 Portfolio

	2025	2026	2027	Total
Energy Savings (MWh)	3,183	3,812	4,407	11,402
Summer Demand Reduction (kWh)	385	478	561	
Winter Demand Reduction (kWh)	526	651	762	
Residential Participation	751	1,053	1,299	3,103
Commercial Participation	130	152	174	456
Total Spending	\$1,732,877	\$1,698,076	\$1,688,513	\$5,119,466

The savings will be accrued through two residential programs, the Targeted Energy Efficiency Program and the Home Energy Improvement Program, and one commercial program, the Commercial Energy Solutions Program. A further description of each program is discussed in Section IV.

The Company is proposing a three-piece approach to cost recovery, including the recovery of the costs to implement the DSM plan, net lost revenues on cumulative three-

1 year savings,² and a financial incentive award for the Company. Discussion of this
2 proposed cost recovery methodology and related recommendations are provided in
3 Section V of my testimony.

4 **Q. What standards does the proposed DSM plan need to meet?**

5 A. KRS 278.285(1) provides the requirements for utility DSM plans, including Kentucky
6 Power's proposed plan. In approving any DSM plans, the Commission must assess the
7 reasonableness of the plan. The following table lists factors to be considered, with
8 comments offered on whether the Company's proposal satisfied each.

² Net lost revenues are reset when the Company has a general rate proceeding.

Table 2. DSM Plan Factors Summary

KRS 278.285 – DSM Plan Factors		Observations and Recommendations
(1)(a)	The specific changes in customers’ consumption patterns which a utility is attempting to influence;	The Company is proposing programs that will reduce energy usage and demand for participating residential and commercial customers.
(1)(b)	The cost and benefit analysis and other jurisdiction for specific demand-side management programs and measures included in a utility’s proposed plan;	The programs as proposed exceed a 1.0 ratio using the total resource cost test. The Company has not included total cost of the plan or each individual program, as they have not included costs related to evaluation, measurement and verification. Therefore, these costs are not included as part of the cost-effectiveness test.
(1)(c)	A utility’s proposal to recover in rate the full costs of demand-side management programs, any net revenues lost due to reduced sales resulting from demand-side management programs, and incentives designed to provide positive financial rewards to a utility to encourage implementation of cost-effective demand management programs;	The Company has proposed a cost recovery method that includes all three methods. However, as explained later in Section IV of my testimony, the net lost revenues timeframe should be limited to one year and only claim savings related to the DSM investment, i.e., not include savings from a payment transfer. Additionally, I recommend a new incentive mechanism based on achievement of a threshold of savings and program metrics which rewards the Company for successfully implementing cost-effective programs.
(1)(d)	Whether a utility’s proposed demand-side management programs are consistent with its most recent long-range integrated resource plan;	In its most recent Integrated Resource Plan (“IRP”) analysis, the Companies did not consider the potential of DSM programs to meet identified future system energy and capacity needs.” ³ However, during the 2022 IRP proceeding, the Company provided its MPS on August 11, 2023, in Case No. 2022-00392, and the Company notified the parties to the IRP proceeding that it planned to offer programs, but the level of investment and type of programs were not solidified. The programs recommended in the MPS during the IRP were more extensive and at a greater level of investment than the Company has proposed in this application.

³Integrated Resource Planning Report, Vol. A – Public, *In re Electronic 2022 Integrated Resource Planning Report Of Kentucky Power Company*, Case No. 2023-00092, at 28 (Mar. 20, 2023) (stating that the Company relied on long term load forecasts that accounted for trends in energy efficiency, but “reflect[ed] no approved DSM program activity” with “no adjustments . . . made to the load forecast.”).

(1)(e)	Whether the plan results in any unreasonable prejudice or disadvantage to any class of customers;	As proposed, there is no prejudice or disadvantage to any class of customer. Industrial customers have been excluded from program offerings and as such will not pay the DSM surcharge. The Company is offering a component to enhance income-qualified customers’ homes that participate through the Weatherization Assistance Program (“WAP”), and the plan also allows for market-rate participation.
(1)(f)	The extent to which customer representatives and the Office of the Attorney General have been involved in developing the plan, including program design, cost recovery mechanisms, and financial incentives, and if involved, the amount of support for the plan by each participate, provided however, that unanimity among participants developing the plan shall not be required for the commission to approve the plan;	<p>The Joint Intervenors represent the interests of their organizations and their members in this proceeding, many of whom are customers of Kentucky Power. To date, the Office of the Attorney General has not provided notice in this proceeding to participate.</p> <p>Prior to filing its DSM plan, the Company committed to collaborating with the Joint Intervenors and the Company participated in two stakeholder meetings. While recommendations have been made related to the DSM plan in advance of the filing, relatively little changed based on the Joint Intervenors’ feedback.</p>
(1)(g)	The extent to which the plan provides programs which are available, affordable, and useful to all customers;	I do not believe that the plan as proposed meets these requirements. The program budgets do not provide the proper level of incentives and lack financing opportunities or connections for participants to overcome the cost barrier of investing in energy efficiency, and the level of funding may not be sufficient to maintain program offerings year-round. Furthermore, the limited proposed portfolio has minimal savings associated with it, and as a result the proposals are not sufficiently scaled to meet the goals articulated by the Company’s witnesses, i.e. deferring “the need for new sources of power, including generation assets, energy market purchases, and transmission and distribution capacity additions,” ⁴ or promoting “customer affordability and rate stability while maintaining grid reliability and sustainability.” ⁵

1

⁴ Direct Testimony of Barrett L. Nolen on Behalf of Kentucky Power Company, *In re Electronic Application Of Kentucky Power Company For: (1) Approval To Expand Its Targeted Energy Efficiency Program; (2) Approval Of A Home Energy Improvement Program And A Commercial Energy Solutions Program; (3) Authority To Recover Costs And Net Lost Revenues, And To Receive Incentives Associated With The Implementation Of Its Demand-Side Management/Energy Efficiency Programs; (4) Approval Of Revised Tariff D.S.M.C.; (5) Acceptance Of Its Annual DSM Status Report; And (6) All Other Required Approvals And Relief*, Case No. 2024-00115, at 4 (May 1, 2024) (“Nolen Direct”).

⁵ Nolen Direct at 4.

1 These factors are many, and they are not exhaustive.⁶ “[T]he Commission can consider
2 anything that will help determine whether the programs are reasonable.”⁷

3 In addition to the reasonableness of the application, the statute provides that the cost
4 recovery mechanism may include recovery of lost revenues or financial incentives or
5 both, and that the DSM plan costs must be assigned to the class or classes of customers
6 which benefit from the program.⁸

7 **Q. You indicated that you do not believe that the Company’s DSM Plan satisfies every**
8 **factor in KRS 278.285(1). Do you believe that the plan is reasonable and should be**
9 **approved?**

10 A. Yes, with inclusion of the recommendations I’ve offered here. I recommend that the
11 Commission approve the plan, and further, establish a minimum reasonable savings goal
12 around which the Company should design an expanded portfolio. I recommend that the
13 Company develop a three-year plan that ramps up to achieve at least 0.2% energy savings
14 as a percent of 2022 retail sales. That plan, and the development of that plan, should
15 reflect the overarching goals of reducing consumption and demand, and providing
16 substantive benefits to customers.

17 As discussed below, a greater investment to provide a DSM plan with higher energy
18 savings will better match the recommendations in the Company’s 2023 Market Potential
19 Study, which ratepayers funded at a cost of \$246,545.40.⁹ The recommended

⁶ KRS 278.285(1) (“Factors to be considered in this determination include, but are not limited to . . .”).

⁷ Order, *In re Electronic Application of Kentucky Power Company For: (1) Approval of Continuation of Its Targeted Energy Efficiency Program; (2) Authority to Recover Costs and Net Lost Revenues, and to Receive Incentives Associated with the Implementation of its Demand-Side Management Programs; (3) Acceptance of its Annual DSM Status Report; and (4) All Other Required Approvals and Relief*, Case No. 2023-00362, at 3 (Dec. 15, 2023) https://psc.ky.gov/pscscf/2023%20Cases/2023-00362//20231215_PSC_ORDER.pdf.

⁸ KRS 278.285(2), (3).

⁹ Case No. 2023-00362 (Dec. 12, 2023), Order at 5–6.

1 enhancements that I discuss can assist the portfolio in not only providing an increased
2 benefit to customers, including non-participants, but also ensuring all customers paying
3 into the surcharge can participate in the programs by including incentive ranges and
4 opportunities for financing.

5 **Q. Has the Company previously implemented DSM programs?**

6 A. Yes. Although I was not a part of previous proceedings, my understanding is that the
7 Company offered DSM programs beginning in 1996.¹⁰ However, except for the TEE
8 Program, the programs sunset in 2017. The TEE Program, which serves to provide
9 supplemental funding to the state's Weatherization Assistance Program, has been offered
10 continuously since the other programs sunset, at a budget of less than \$300,000 per
11 year.¹¹

12 **Q. Please detail the level of savings and spending by the program for 2014 through**
13 **2017 compared to the proposed portfolio.**

14 A. As shown in Table 3 below, the annual spending from 2014 through 2017 was double to
15 quadruple the amount of spending proposed on an annual basis for 2025-2027, ranging
16 from \$3.7 million to \$6.5 million. The level of annual savings achieved in 2014-2017
17 was significantly higher, ranging from 16.9 MWh to 60 MWh, compared to the annual
18 savings projected here of 3.8 MWh.

¹⁰ Nolen Direct at 5.

¹¹ E.g., Nolen Direct at 6.

Table 3. Comparison of Historical Achievement to Proposed Annual Savings¹²

	2014	2015	2016	2017	Proposed 2025
Spending as % of Revenues	0.67%	1.04%	1.14%	1.08%	0.25%
Spending	\$3,736,549	\$5,585,847	\$6,514,395	\$5,875,294	\$1,732,877
Savings as % of Sales	0.26%	0.43%	0.69%	1.08%	0.06%
Energy Savings (kWh)	16,965,447	26,668,537	40,394,991	60,161,788	3,183,000

Q. With respect to the proposed DSM plan, what is the percentage of proposed savings compared to the Company’s retail revenue and retail sales?

A. As shown in Table 3 above, the average spending over the three years is equivalent to 0.3% of 2023 retail sales and the average annual energy savings as compared to 2023 retail sales is 0.07%. This level of investment and savings is significantly lower than the Company offered in past years when it was operating more than the TEE program.

Q. How does this level of investment compare to other utilities?

A. Not well; it is very low. In the 2023 Utility Scorecard, American Council for an Energy Efficient Economy (“ACEEE”) evaluated the 53 largest electric utilities based upon retail sales volume.¹³ As part of the evaluation, the scorecard evaluates each of the utilities on spending on energy efficiency and demand response programs as a percentage of revenue, the net savings achieved as a percentage of retail sales, and peak demand

¹² *Electric Sales, Revenue, and Average Price: Table 10*, U.S. Energy Information Administration (Oct. 5, 2023), https://www.eia.gov/electricity/sales_revenue_price/ (Annual revenue and electric sales for Kentucky Power are from the Electric Sales, Revenue, and Average Price Reports provided by the United States Energy Information Administration.).

¹³ Mike Specian et al., *2023 Utility Energy Efficiency Scorecard*, American Council for an Energy Efficient Economy (Aug. 2023) (“ACEEE Scorecard”), <https://www.aceee.org/sites/default/files/pdfs/U2304.pdf> (Although this report was released in 2023, the data assessed in the report is from 2020 and 2021.).

1 reduction as a percentage of total peak demand, among other items. These percentages
2 allow for a comparison and ranking across the utilities. Reviewing only the net savings as
3 a percentage of retail sales, 20 of the 53 utilities achieved more than one percent savings,
4 ranging from 1.04% to 3%, and 13 utilities achieved between 0.5% and 1%. This shows
5 that higher savings are achievable from utility energy efficiency programs.

6 While no Kentucky utilities were included as part of the Scorecard, it is important to note
7 that a couple of the utilities included in the Scorecard were assessed as benchmarking
8 comparisons in the Company's MPS.¹⁴ Additionally, I have included the proposed
9 average portfolio savings and spending compared to retail sales and revenues in the
10 Figure below in green. As shown by the red circle, Kentucky Power's proposed portfolio
11 is significantly smaller than most of the utilities and is below the average investment and
12 savings levels.

¹⁴ Nolen Direct, Ex. BLN-1 at 40 of 123; ACEEE Scorecard, Tbls. 8, 10. The following utilities were used as benchmarking comparisons in the MPS and also included in the Scorecard study: Duke Energy Carolinas (NC), which achieved 0.76% savings compared to sales, while investing 1.19% as compared to its retail revenue, and FirstEnergy West Penn Power, which achieved 0.47% savings compared to sales while investing 1.51% as compared to its retail revenue.

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Figure 1. Comparison of Utilities' Investment in Energy Efficiency based upon Revenues and Energy Sales



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4

One caveat is that the 2023 Utility Scorecard is based on 2021 data, and as a result, there is residential lighting that contributed to lower cost energy savings for those utilities.

5

6

Because the Company's portfolio does not include residential lighting savings, I would

7

expect that the cost to achieve savings will be higher than was experienced by the utilities

8

in the scorecard in 2021. That said, since residential lighting measures have sunset, other

9

utilities have still proposed portfolios that exceed one percent of savings as a percentage

10

of sales. Therefore, while Kentucky Power has not historically achieved cost-effective

11

savings in line with peer utilities, there is reason to expect that Kentucky Power could

12

successfully increase its investment in its portfolio and achieve greater savings, close to

13

at least half a percent per year.

14

Q. How did the Company develop its DSM plan?

15

A. The Company conducted a Market Potential Study in 2023, which was then referenced in

16

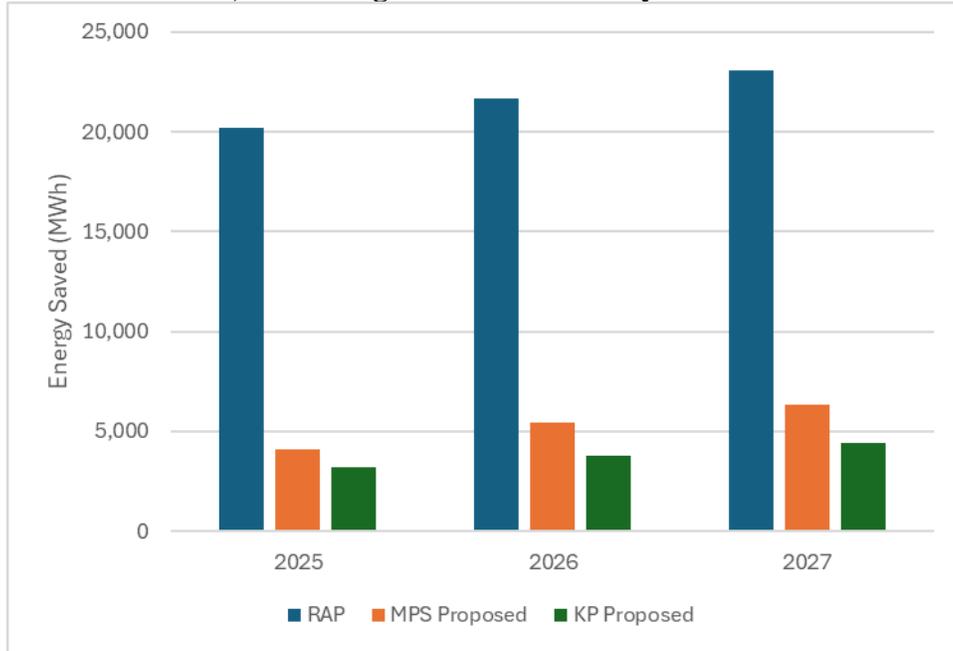
the Company's IRP proceeding. The MPS offered a more robust portfolio of DSM

1 programs based upon its Realistic Achievable Potential (“RAP”) scenario¹⁵ than the
2 portfolio proposed in the IRP and even more than the one proposed by the Company in
3 this proceeding. As shown in Figures 2, 3, and 4, the level of energy savings, and summer
4 demand reduction is the lowest under Kentucky Power’s Proposed DSM Plan, and except
5 for 2025, the proposed budgets are also lowest in that DSM Plan. The MPS identified
6 significantly greater energy and demand savings potential in the service territory that the
7 parameters placed by Kentucky Power are limiting.

¹⁵ The MPS explains that “achievable potential attempts to estimate what savings can be realistically achieved through market interventions, when it can be captured, and how much it would cost to do so.” Nolen Direct, Ex. BLN-1 at 27 of 123.

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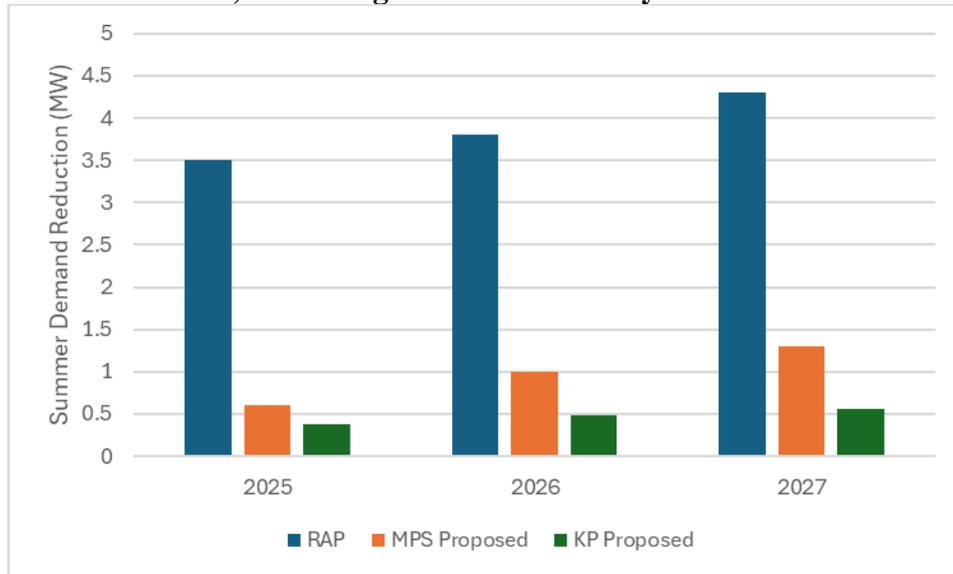
Figure 2. Comparison of Energy Savings (MWh) from RAP, MPS Programs and Kentucky Power DSM Plan



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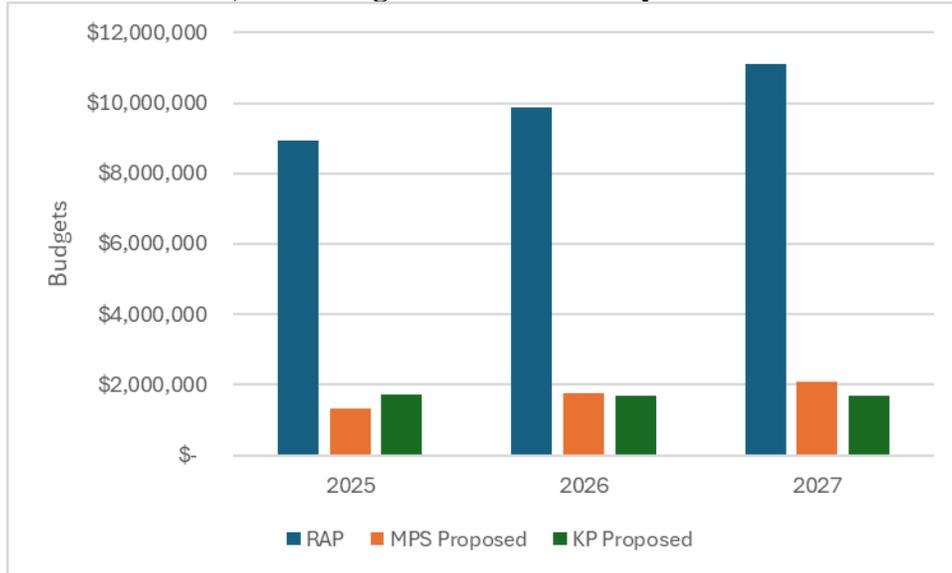
Figure 3. Comparison of Summer Demand Reduction (MW) from RAP, MPS Programs and Kentucky Power DSM Plan



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**Figure 4. Comparison of Budgets from
RAP, MPS Programs and Kentucky Power DSM Plan**



3

4 The MPS proposed that over a three-year period, a portfolio consisting of five programs,
5 three residential and two commercial, at a total cost of approximately \$10 million. The
6 MPS programs include:

7

- 8 1. Targeted Energy Efficiency Program – Continuation of the current income
9 eligible program funded through the Kentucky Power D.S.M.C. surcharge to
10 provide supplemental funding to the state’s weatherization assistance program for
11 heating, ventilation, and air conditioning (“HVAC”) and weatherization measures.
- 12 2. Home Energy Improvement Program – Program to provide energy audits and
13 rebates for weatherization and HVAC measures.
- 14 3. Marketplace Program – Online platform for residential ratepayers to purchase
15 energy efficiency products, such as smart thermostats, air purifiers, clothes
washers, and smart plugs.

- 1 4. Commercial Prescriptive Program – Offer commercial and industrial customers
2 with incentives to install energy efficiency technology such as lighting fixtures,
3 controls, thermostats, HVAC, and kitchen equipment.
- 4 5. Commercial Custom Program – Existing and new facilities can receive incentives
5 for cost-effective projects and measures that are not rebated under the
6 Commercial Prescriptive program and will provide verified energy savings for
7 each project.

8 Kentucky Power opted not to include the Marketplace Program and Commercial Custom
9 Program in their proposed portfolio.

10 **Q. Do you have any concerns about the Company’s MPS?**

11 A. Yes, I have two overarching concerns. First, the scope of the MPS was unreasonably
12 narrow. The Company placed limitations on the study itself, including directing its
13 consultant not to explore demand response opportunities on either the residential or
14 commercial sectors¹⁶ and not to explore new construction opportunities, including
15 manufactured housing.¹⁷ Demand response can be used to lower demand during critical
16 peaks, which can reduce overall capacity needs. Additionally, demand response can be
17 used as a reliability tool for the utility to lower demand in specific areas, when needed, to
18 avoid brown outs. Demand response opportunities last over several years and as
19 discussed below, can provide savings in both summer and winter seasons.

20 The exclusion of new construction programs also artificially narrowed the scope of the
21 MPS. Even in an area with a declining population, some new construction is still likely to

¹⁶ Response of Kentucky Power Company to Joint Intervenors’ Initial Request for Information, Case No. 2024-00115, Question 24 (July 8, 2024) (KPC Response to JI Q1.24); KPC Response to JI Q1.65.

¹⁷ Response to JI Q1.66.

1 occur. New construction programs that incentivize more efficient new manufactured
2 housing could be a significant energy saving opportunity for Kentucky Power.

3 Manufactured housing is a prevalent housing type in Kentucky generally,¹⁸ and in the
4 Company's service territory.¹⁹

5 Despite the low cost of the housing, manufactured housing has the highest average
6 energy use per square foot compared to other housing types.²⁰ Most of those units were
7 made before efficiency standards and requirements were established and some units
8 would make sense to replace rather than retrofit. Offering new construction rebates and or
9 incentives to upgrade a manufactured home establishes a way to control demand,
10 particularly with the portfolio's investment in heat pumps and forecasted capacity
11 shortfalls, and will improve the quality of the housing stock.

12 The second concern relates to how the Company used the findings of the MPS to develop
13 its proposed plan. Specifically, the Company scaled down the level of investment from
14 the proposed MPS portfolio scenario and did not assess whether the more-limited
15 proposed portfolio would result in more barriers to customers participating in the
16 program, such as limited-income customers and small businesses, as well as residential
17 properties that may face health and safety barriers. Because the Company is proposing a

¹⁸ *E.g., Comparative Housing Characteristics [for Kentucky]*, U.S. Census Bureau (2022), [https://data.census.gov/table?q=housing+types+in+kentucky&t=Heating+and+Air+Conditioning+\(HVAC\):Physical+Characteristics&g=050XX00US21019&y=2022](https://data.census.gov/table?q=housing+types+in+kentucky&t=Heating+and+Air+Conditioning+(HVAC):Physical+Characteristics&g=050XX00US21019&y=2022) (reporting in 2022 that manufactured housing makes up roughly 11% of housing in Kentucky, or 220,581 homes).

¹⁹ Nolen Direct, Ex. BLN-1 at 34 of 123 (finding that manufactured homes account for 31% of the Company's residential achievable savings potential).

²⁰ Nolen Direct, Ex. BLN-1 at 50 of 123, Table 6-1 (Manufactured homes use 14.81 megawatt-hours ("MWh")/square foot annually, compared to single family and multifamily homes, which are 11.05 and 4.39 MWh/square foot, respectively.).

1 portfolio that is smaller than the RAP scenario, fewer customers will be able to
2 participate *and* there are significant cost-effective savings being left on the table.

3 **Q. In addition to your concerns about the constraints placed on the MPS, do you have**
4 **further doubts related to the MPS projections.**

5 A. Yes, like many market potential studies, the Company’s MPS is overly conservative. The
6 limitations of potential studies have been well-documented. Organizations such as
7 ACEEE, the Regulatory Assistance Project, and Lawrence-Berkeley National Laboratory
8 have studied the correlation of between potential study estimates and actual savings
9 achievements.²¹ In one such study, ACEEE reviewed 45 publicly available studies
10 published since 2009 and found that the studies tended to rely on inaccurate models and
11 underestimate energy savings.²² The report concludes, among other things:

[G]iven the inaccuracy of models and the generally conservative approach
of these studies, there is likely a great deal of additional cost-effective
potential available beyond what is identified. . . . Moreover, given the fact
that most studies base their customer-participation models on economics,
even short-term forecasts of market dynamics are murky. This is because
studies tend to downplay the impact of program design elements such as
marketing and education, as well as the non-energy justifications for
investing in energy efficiency.²³

²¹ See, e.g., David B. Goldstein, *Extreme Efficiency: How Far Can We Go If We Really Need to?*, ACEEE Summer Study on Energy Efficiency in Buildings, at 10-44 through 10-56 (2008), https://www.aceee.org/files/proceedings/2008/data/papers/10_435.pdf; Philip Mosenthal, *Do Potential Studies Accurately Forecast What is Possible in the Future? Are We Mislabeled and Misusing Them?: Presentation for ACEEE Energy Efficiency as a Resource Conference*, Optimal Energy, Inc. (Sept. 21, 2015), https://www.aceee.org/sites/default/files/pdf/conferences/eer/2015/Philip_Mosenthal_Session2D_EER15_9.21.15.pdf; Chris Kramer & Glenn Reed, *Ten Pitfalls of Potential Studies*, Regulatory Assistance Project (2012), <https://www.raponline.org/wp-content/uploads/2023/09/energyfutures-kramerreed-tenpitfallsdraft2-2012-oct-24.pdf>.

²² Max Neubauer, *Cracking the TEAPOT: Technical, Economic, and Achievable Energy Efficiency Potential Studies*, ACEEE, at 39 (Aug. 2014) (“Neubauer Report”) <https://www.aceee.org/sites/default/files/pdfs/u1407.pdf>.

²³ Neubauer Report at 39.

1 Therefore, not only is there potential achievable cost-effective energy savings in the RAP
2 scenario beyond what is proposed in the Company’s DSM Plan, it is likely that the RAP
3 scenario also understates the achievable cost-effective energy savings potential.

4 **Q. What level of net energy savings would you like to see proposed as part of the**
5 **portfolio?**

6 A. To ensure that Kentucky Power is providing a reasonable portfolio that provides benefits
7 for both participants and non-participants, and to ensure that the investment in DSM is
8 not only cost-effective but also has an impact on deferring capacity and system
9 investments, the Company should enhance its plan to achieve at least 0.2% of annual
10 savings, equivalent to 10,587 MWh, compared to the Company’s annual retail sales,
11 based on 2022 retail sales.²⁴

12 **IV. PROGRAM REVIEW AND RECOMMENDATIONS**

13 **Q. Is it correct that the Company is proposing three programs?**

14 A. Yes. As part of a three-year Plan, the Company is proposing one continued and one new
15 residential program, the Targeted Energy Efficiency program and the Home Energy
16 Improvement Program, and one new commercial program, the Commercial Energy
17 Solutions Program. For each of the proposed programs, below I provide a summary of the
18 program and recommended program enhancements. In addition to the Company’s
19 proposed programs, I recommend two additional elements the Company’s portfolio
20 should offer: a rebate program for new manufactured housing and demand response

²⁴2022 *Utility Bundled Retail Sales – Total, Table 10*, U.S. Energy Information Administration (Oct. 5, 2023), <https://www.eia.gov/electricity/data.php>. In 2022, the latest full year data set available, Kentucky Power’s retail sales were 5,391,298 MWh.

1 enabled thermostats to allow for the Company to implement a demand response program
2 in the future.

3 *A. Targeted Energy Efficiency Program*

4 **Q. Please summarize the TEE Program.**

5 A. The Company is proposing to expand its current TEE Program, to provide supplemental
6 funding to the state’s Department of Energy’s (“DOE”) Weatherization Assistance
7 Program to the State’s DOE Weatherization Readiness Fund to cover measures not
8 funded by WAP, and to increase customer energy education.

9 The Weatherization Readiness Fund provides funds to address health and safety issues,
10 such as mold and structural repairs, to make residential properties ready to receive
11 weatherization measures. The Company is proposing to provide up to \$1,000 per home to
12 address health and safety concerns for a total of 15 homes in 2025, 20 homes in 2026,
13 and 25 homes in 2027.²⁵ The Community Action Agencies (“CAAs”) within the
14 Company’s service territory will determine which homes receive this funding. According
15 to Kentucky Power, this amount of funding and number of homes is based upon the
16 CAAs’ review of their DOE budgets, number of homes completed per year, and types of
17 health and safety issues.²⁶

18 In addition to the Weatherization Readiness Funds, the Company provides the CAAs
19 with supplemental incentives for homes that receive WAP weatherization within the
20 service territory. Currently, the Company provides funding for air sealing, duct sealing,

²⁵ Nolen Direct at 15.

²⁶ Nolen Direct at 15; *see also* Response of Kentucky Power Company to Joint Intervenors’ Supplemental Request for Information, Case No. 2024-00115, Question 24 (August 5, 2024), (“KPC Response to JI Q2.24”).

1 insulation, high efficiency heat pumps, and hot water heat measures.²⁷ With this
2 application, the Company is seeking to expand eligible measures to include “heat pump
3 water heaters, ductless heat pumps, and ENERGY STAR room air conditioners.”²⁸
4 Additionally, the Company is proposing to increase the customer energy education
5 expense from \$50 to \$75 per application and increasing the administrative expense from
6 \$200 to \$300 per application, the latter of which assists with the additional administrative
7 time needed to report on the TEE funding.²⁹

8 **Q. Please provide your thoughts on the TEE program’s contributions to the state’s**
9 **Weatherization Readiness Fund.**

10 A. I support the Company’s proposal to provide supplemental funds to assist with
11 eliminating health and safety barriers for homes to participate in the WAP and to expand
12 the measure offerings for weatherization projects.

13 As noted by Company witness Nolen, the service territory’s CAAs recognize that among
14 applicants that qualify for WAP-funded home weatherization assistance, as many as half
15 of those households are deferred due to health and safety issues.³⁰ The cost to address
16 health and safety barriers in order to prevent these deferrals can be high and prevent
17 customers from receiving weatherization services. It is a real challenge, and this
18 additional funding will help avoid some deferrals.³¹

²⁷ Nolen Direct at 5.

²⁸ Nolen Direct at 15–16.

²⁹ Nolen Direct at 16–17.

³⁰ Nolen Direct at 14; KPC Response to JI Q1.46 (basis for the \$1000 amount is “solely” nonspecific “feedback from the community action agencies in Kentucky Power’s Service territory”).

³¹ *E.g.*, KPC Response to JI Q2.19 (explaining that the Weatherization Readiness Fund “aim[s] to reduce deferrals and qualify more customers for the DOE’s WAP and Company’s TEE Program”).

1 While avoiding some deferrals that otherwise would have kept households from
2 participating, it is unclear from the Company’s testimony and discovery responses
3 whether this level of funding is reasonable.³² The Company should work with the CAAs
4 to review the number of homes deferred within the service territory during the program
5 cycle, as well as the average home deferral costs and the types of measures and work
6 needed, to assess whether the \$1,000 contribution should be adjusted.

7 Furthermore, the Company indicated that they are not currently tracking information
8 regarding TEE Program participants.³³ However, tracking number of referrals and
9 deferrals, as well as the reasons and measures needed to address deferrals can help to
10 inform program design and future investment under the TEE program. It is likely that the
11 costs to implement corrections to health and safety concerns will exceed available
12 funding.

13 **Q. Beyond health and safety, do you believe that homes seeking energy efficiency**
14 **through the WAP will encounter other barriers?**

15 A. Yes. The level of funding available through the state’s WAP is insufficient to address the
16 need throughout the state of Kentucky, much less the Company’s service territory. The
17 number of homes served by the TEE Program is limited based upon the proposed level of
18 funding, and there is a wait list, which means that qualified participants may have to wait
19 a year or more to received weatherization services.³⁴ Kentucky Power should reassess
20 whether its TEE Program budget levels allow the program to serve enough homes that

³² KPC Response to JI Q1.46 (“The deferral estimate was based solely on feedback from the community action agencies in Kentucky Power’s service territory.”).

³³ KPC Response to JI Q2.3.

³⁴ KPC Response to JI Q1.20; *see also* KPC Response to JI Q2.16(c) (“According to the community actions agencies, there are approximately 137 eligible customers on the Department of Energy’s program waitlist.”).

1 income-eligible customers have a reasonable opportunity to participate, and evaluate
2 ways to expand participation.

3 The number of Kentucky residences weatherized per year by WAP falls far below the
4 need in the state. In the 2024 program year, WAP plans to weatherize 508 homes across
5 all of Kentucky.³⁵ The number of homes to be addressed by WAP in 2024 is less than the
6 average number of Kentucky Power customers that have their service terminated for non-
7 payment more than once per year (527 customers based on data from July 2020-June
8 2024).³⁶ This is an important comparison, as the Company noted that TEE participants
9 may receive more than one termination notice per year but on average those same
10 customers do not have their service terminated for nonpayment more than once a year.³⁷
11 This may be indicative of the benefits of participating in the TEE Program.

12 As shown in Figure 5 below, there are significantly more homes, not only statewide, but
13 also within the Kentucky Power service territory which are experiencing high or severe
14 energy burdens within the income-eligible guidelines for WAP, but due to the limited
15 budget for the federal program, many are not able to access the program.³⁸

³⁵ *Weatherization Assistance Program Weatherization Annual File Worksheet: Kentucky Housing Corporation, Program Year 2024*, U.S. Dep't of Energy (May 9, 2024), [https://www.kyhousing.org/Partners/Developers/Single-Family/Weatherization-Assistance/Documents/Attachment%204,%20Annual%20File%20\(2\).pdf](https://www.kyhousing.org/Partners/Developers/Single-Family/Weatherization-Assistance/Documents/Attachment%204,%20Annual%20File%20(2).pdf).

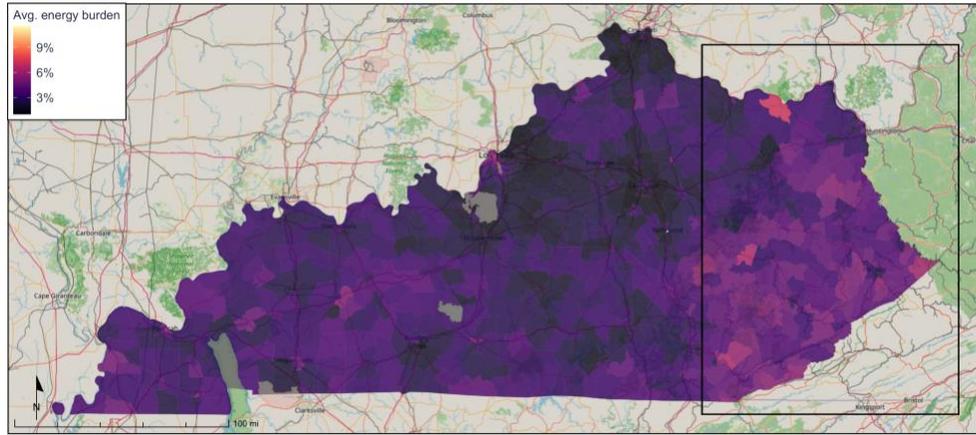
³⁶ KPC Response to JI Q2.6.

³⁷ KPC Response to JI Q2.7.

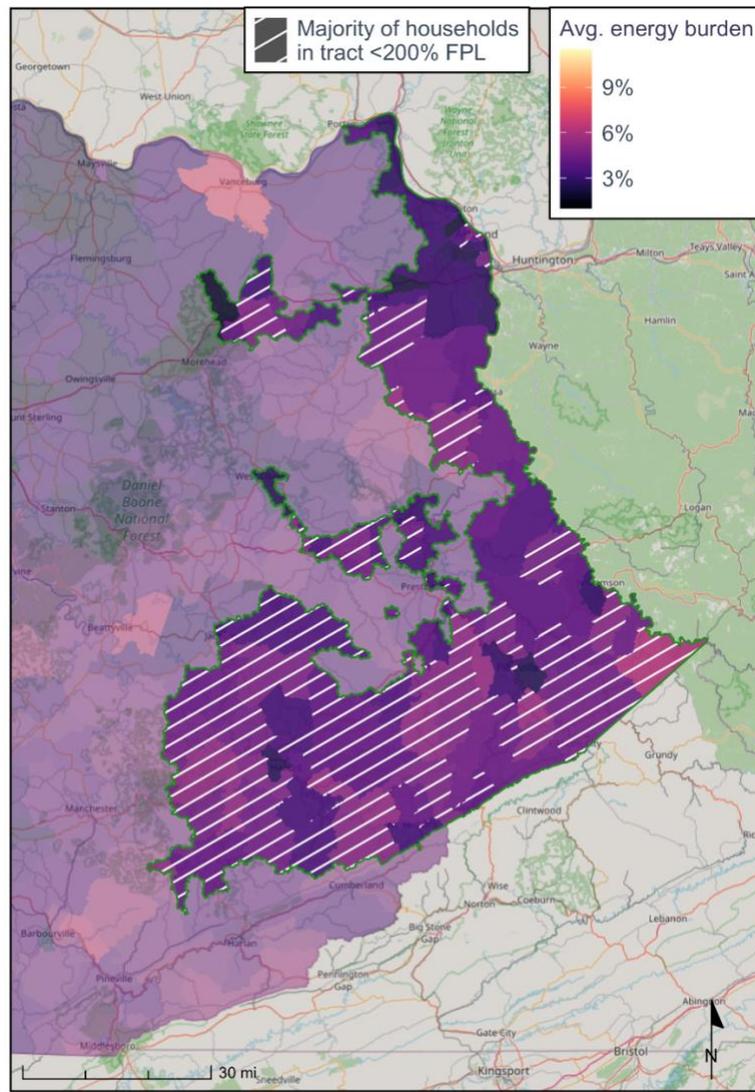
³⁸ Figure 5 uses data from the Department of Energy's Low-Income Energy Affordability Data ("LEAD") Tool. *DOE LEAD Tool*, U.S. Dep't of Energy, Office of State and Community Energy Programs, <https://www.energy.gov/scep/slsc/lead-tool> (last visited Aug. 20, 2024).

1
2

**Figure 5. Energy Burden Statewide and in
Kentucky Power Service Territory**



3



4

1 Per the DOE Low-Income Energy Affordability Data (“LEAD”) tool, Kentuckians with
2 incomes at or below 200% of the federal poverty level experience an energy burden
3 ranging from 10-15%.³⁹ In reviewing seven counties in which the majority resides in the
4 Kentucky Power service territory, the DOE LEAD tool indicates that there are 23,741
5 households within those counties that have energy burdens of six percent or greater and
6 incomes at 200% or below the federal poverty level (“FPL”).⁴⁰ As mapped in Figure 5
7 above, the majority of households in a significant proportion of census tracts within
8 Kentucky Power’s service territory report incomes below 200% FPL, with energy
9 burdens from 6% to as much as 18%.

10 The Company should conduct research to better understand how many income-eligible
11 customers may not be able to access WAP. Depending on the level of need, it may be
12 beneficial for Kentucky Power to operate the TEE program outside of the WAP to allow
13 for a greater level of eligibility.

14 **Q. Do you have any program implementation concerns?**

15 A. Yes. I have two concerns: first, with CAA capacity to utilize the funds, and the second
16 with relation to the Company’s level of claimed savings. In response to JI 2.5, the
17 Company has indicated that there are years, outside of those impacted by COVID,
18 including 2024, where at least some of the CAAs are coming in under forecasted
19 budgets.⁴¹ Given the small number of participants forecasted for the TEE Program
20 relative to the scope of the need, it is critical that those funds are utilized and invested in
21 customers’ homes. Given the level of need in the service territory and the benefits to

³⁹ *Id.*

⁴⁰ *Id.* The counties referenced include: Marting, Pike, Floyd, Knott, Letcher, Lawrence, and Boyd.

⁴¹ KPC Response to JI Q2.5.

1 reduce multiple service terminations in a year, it may be necessary for Kentucky Power
2 to offer a complimentary program to WAP to ensure program investment.

3 Second, it is unclear from a review of the claimed energy savings for the TEE Program if
4 the Company is tracking the savings from measures implemented with its funds and
5 whether the Company is claiming savings only from TEE Program funded measures or
6 the entire project's savings. This is supported by the fact that the Company does not track
7 pre -and post-energy usage for customers that participate in the TEE program.⁴² Based on
8 the limited number of participants in the TEE Program, it seems odd that the Company
9 would rely on an average savings established in 2015, rather than verifying the actual
10 savings through a bill analysis, especially since the program savings has not been
11 independently evaluated and verified.

12 Additionally, it does not appear that the Company is tracking which measures it is
13 funding nor the level of savings achieved in each home that participates in the TEE
14 Program. For the level of savings and net lost revenues claimed, the Company should
15 either be tracking the measures funded by the TEE program and use an assumed savings
16 value for those measures, based on a Technical Resource Manual, or should be using a
17 cost allocation, where the percentage of the overall investment from the TEE program
18 would allocate that level of savings (i.e., TEE contributed fifteen percent of the cost of
19 the measures/labor and therefore claims fifteen percent of the savings from that project).
20 Without tracking this data, the Company could likely be overclaiming savings associated
21 with the TEE Program's DSM funding and thus over collecting net lost revenues for as

⁴² KPC Response to JI Q2.8. *But see* Nolen Direct at 7 (reporting average savings for three households after participating in TEE Program); Response of Kentucky Power Company to Commission Staff's First Request for Information, Case No. 2024-00115, Question 1 (July 8, 2024) ("KPC Response to Staff Q1.1").

1 long as the program has been running. The Company needs to ensure that it is only
2 counting savings that it has contributed towards and not counting savings funded by
3 WAP.

4 **Q. Do you have any additional recommendations for the TEE Program?**

5 A. In addition to the tracking recommendations I stated, I also recommend that Kentucky
6 Power consider increasing funding for this program, where CAA capacity is available,
7 and encourage the CAAs to prioritize the application of TEE funding on homes that have
8 electric baseboard heating, as it will provide greater energy and demand savings,
9 particularly for winter season. Additionally, these projects tend to be more costly than
10 implementing a central heat pump in a home with existing duct work.

11 ***B. Home Energy Improvement Program***

12 **Q. Please summarize the HEIP.**

13 A. The HEIP would be a new program offering for residential customers, if approved.
14 Participants in the program will receive a home energy audit, including a blower door test
15 for those that have air sealing measures identified, to identify key areas for energy
16 efficiency measures.⁴³ At no cost, participants can receive low-flow shower heads, water
17 heater wraps and pipe insulation, weatherstripping, caulking, and power strips.
18 Additionally, participants can receive rebates for qualified weatherization and HVAC
19 measures, such as insulation, air sealing, heat pumps, heat pump water heaters, and smart
20 thermostats.

⁴³ Nolen Direct at 18–19.

1 **Q. Do you have any recommendations related to the proposed HEIP?**

2 A. I support the Company's proposal to expand its portfolio to include this audit program. I
3 am supportive of audit programs, as they provide whole home recommendations for
4 efficiency and encourage weatherization of the home prior to the implementation of
5 HVAC equipment so that it is properly sized. Additionally offering certain rebate
6 measures without an audit requirement would allow customers to make energy efficient
7 choices when replacing measures upon failure or without being concerned with the
8 timeline an audit may require.

9 I do have recommendations to improve the program design, however. First, as designed,
10 the program focuses on whole home measures, many of which a barriered home may not
11 be eligible for, such as a heat pump, air sealing, and insulation. To broaden the
12 opportunities for ratepayers to participate, the program could offer rebates for room air
13 conditioners or dehumidifiers, which could allow homes with a health and safety barrier
14 to still participate.

15 Second, there is a limited opportunity for low-income customers, or even moderate-
16 income customers, to participate in the residential DSM plan that they are funding.
17 Measures such as insulation and HVAC systems can be costly, even after program
18 rebates, particularly if there are barriers in the home that must be addressed first. As such,
19 the cost of the projects will likely keep low-income customers from participating in
20 Kentucky Power's DSM programs unless they are fortunate enough to make it on the
21 WAP waitlist while the TEE program has funding available for the year. To increase the
22 availability for residential ratepayers to participate in the DSM program, the Company
23 should consider offering increased rebate amounts for income-eligible customers. This

1 could be an increased rebate amount offering or adding a measure such as insulation and
2 air sealing to the direct install list.

3 Third, the Company has indicated that the HEIP “is available on a voluntary basis until
4 funds are depleted.”⁴⁴ Energy efficiency programs should be funded, when funds are
5 available, to have sufficient funding to last the entire program year. This allows for
6 program continuity for participants planning on participating and for vendors that will be
7 implementing the program. The Company should provide its forecasted budget to allow
8 for funding of the program throughout the entire program year. If the Company is not
9 amendable to providing a reasonable level of funding for the program on an annual basis,
10 it should as part of its rebuttal testimony detail why an increased level of funding on an
11 annual basis would not be reasonable.

12 ***C. Commercial Energy Solutions Program***

13 **Q. Please summarize the Commercial Energy Savings Program.**

14 A. Commercial ratepayers are eligible to receive incentives/rebates for energy efficiency
15 measures that are identified during a walk-through audit.⁴⁵ The Company plans to slowly
16 implement this program over the three-year plan by introducing lighting in year one,
17 adding HVAC equipment incentives in year two, and adding kitchen equipment rebates
18 in year three.⁴⁶

⁴⁴ Nolen Direct at 18.

⁴⁵ Direct Testimony of Scott E. Bishop on Behalf of Kentucky Power Company, Ex. SEB-1 at 6, *In re Electronic Application of Kentucky Power Company for: (1) Approval to Expand Its Targeted Energy Efficiency Program; (2) Approval of a Home Energy Improvement Program and a Commercial Energy Solutions Program; (3) Authority To Recover Costs And Net Lost Revenues, And To Receive Incentives Associated With The Implementation Of Its Demand-Side Management/Energy Efficiency Programs; (4) Approval Of Revised Tariff D.S.M.C.; (5) Acceptance Of Its Annual DSM Status Report; And (6) All Other Required Approvals And Relief*, Case No. 2024-00115 (May 1, 2024) (adopted July 8, 2024 by Tanner S. Wolfram) (“Bishop (Wolfram) Direct”).

⁴⁶ Nolen Direct, Ex. BLN-3 at 1.

1 **Q. Do you support the Commercial Energy Savings Program?**

2 A. Yes. While I support the program for inclusion in the portfolio, I have a few
3 recommendations to address concerns. First, I am concerned about the accessibility and
4 equity of the program offering, as small businesses may find the programs to be cost-
5 prohibitive to participate in. Small business owners have many things competing for their
6 attention and their budgets, which means that energy efficiency projects may be a low
7 priority on their investment list. Additionally, without significant incentives or financing,
8 the upfront cost and lengthy payback period for some measures, can present challenges.
9 Therefore, utility energy efficiency programs often offer small business programs that
10 have higher incentives than their prescriptive program, to mitigate the unique cost
11 barriers common to small businesses. In a program aiming to serve small businesses,
12 incentives are designed to cover up to 80% of the total project cost. Kentucky
13 Utilities/Louisville Gas and Electric offer a Small Business Direct Install Program
14 (“SBDI”) which includes up to \$675 in no-cost incentives, which include the site visit,
15 LED bulbs, faucet aerators, showerheads, and a smart thermostat.⁴⁷ Duke Energy
16 Kentucky also offers a Small Business Energy Saver program which covers up to 80% of
17 the energy efficiency upgrades, a no-cost audit, and the measures are installed at no
18 cost.⁴⁸ Additionally, there is often a financing offer, through on-bill financing or another
19 program, that offers zero percent financing over the payback period, which is limited to a

⁴⁷ Louisville Gas & Electric and Kentucky Utilities Company, Business Rebates Incentives Overview (effective Jan. 1, 2024), <https://lge-ku.com/sites/default/files/media/files/downloads/Business-Rebate-Fact-Sheet-042424.pdf>.

⁴⁸ Duke Energy Kentucky Electric Tariff, KY. P.S.C. Electric No. 2, Supplemental Revised Sheet No. 118, at 1 (effective May 1, 2020), <https://www.duke-energy.com/-/media/pdfs/for-your-home/rates/electric-ky/sheet-no-118-ky-e-sm-bus-en-saver.pdf?rev=6ca7790206594143ad98b1039d0d8a26>; see also Duke Energy Kentucky, *Small Business Energy Saver Information Page*, <https://www.duke-energy.com/business/products/small-business-energy-saver> (last visited Aug. 20, 2024).

1 few years. For example, in addition to covering up to 85% of the small business energy
2 efficiency project costs, Baltimore Gas and Electric offers the option to finance the
3 remaining 15% of the project over 12-months with no interest.⁴⁹ These program designs
4 allow for more equitable participation between the small and larger commercial
5 businesses that pay in to the surcharge.

6 To make the Commercial Energy Savings Program more accessible to all commercial
7 customers, the Company should provide an incentive adder for qualified small businesses
8 to encourage participation. Based upon the cost-effectiveness of the program and the
9 structure of the total resource cost test, the program will remain cost-effective even with
10 increased rebates, as long as the rebates do not exceed the incremental cost of the rebated
11 measure.

12 The Company should also explore adding a finance offer for small businesses. This could
13 be done through a partnership with another institution, as described below. Finance offers
14 are likely more complicated and can take more time to arrange, so I would understand if
15 it takes time to pursue this program recommendation.

16 Second, in addition to a lack of financing options for small businesses, there are no
17 financing options to support large capital projects, such as a central heating or cooling
18 system or major building upgrades. I am not advocating for the Company to provide
19 financing for large projects, rather the Company should explore partnerships and
20 financing avenues that could support the program and its participants. The financing
21 support could come from community development financial institutions and local banks.

⁴⁹ BGE, *Small Business Energy Solutions Information Page*, <https://bgesmartenergy.com/business/business-programs/small-business-energy-solutions> (last visited Aug. 20, 2024).

1 Third, I have concerns about the slow projected roll out of measures. The Company has
2 proposed a three-year phased roll out of measures in this program, despite having
3 experience implementing commercial programs and using an implementor that
4 implements commercial programs including in other AEP service territories. If there is an
5 opportunity to implement the additional measures prior to the planned roll out, I would
6 encourage the Company to do so. The Company should also preemptively market the
7 new measure offerings, as businesses tend to plan to accommodate energy efficiency
8 projects as part of their annual budget. Subsequently, despite slowly increasing measure
9 offerings over the three years and projecting an increase in participation, the budget is
10 lower in the third year (2027) than the prior two program year projections. The projected
11 budget does not seem to take into account the additional measure offerings and the
12 potential for increased participation as the programs mature. I recommend that the
13 Company examine its proposed budget to ensure it is sufficient to support the growth of
14 commercial measure offerings.

15 ***D. Additional Programmatic Recommendations***

16 **Q. Do you have any overarching recommendations for the two new programs?**

17 A. Yes, I have one recommendation related to the program implementation. The Company
18 will need to rely on contractors and vendors to provide the audits and install the
19 measures. There are cost and program efficiencies that can be developed if the Company
20 develops a network of vendors for the HEIP and the CESP, and if its works with
21 manufacturers, such as heat pump manufacturers, to consider bulk purchase options and
22 potential trainings for vendors supporting the program. These are relationships that can

1 be developed as the programs are implemented, and I recommend that the Company add
2 these objectives as part of its three-year plan.

3 **Q. Based on the proposed portfolio, do you have any recommendations for any**
4 **additional programs that should be offered?**

5 A. Yes, I recommend that the Company explore offering a new manufactured housing
6 program and provide smart thermostats that are compatible with a demand response
7 program.

8 **Q. Please describe your proposed new manufactured housing program.**

9 A. Existing manufactured housing is likely to be less efficient than single- and multi-family
10 homes, as nationwide standards for the housing first went into effect in 1976, were
11 updated in 1994, and then did not undergo any significant changes until 2022.⁵⁰ In 2022,
12 the Department of Energy adopted the latest International Energy Conservation Code
13 standards, IECC 2021, for manufactured homes which should lower energy bills
14 compared to existing models due to increased insulation and air sealing requirements;
15 however, this code adoption only impacts new units.⁵¹ According to the U.S. Census
16 Bureau, manufactured housing makes up approximately 11% of housing in Kentucky, or
17 220,581 homes.⁵² As reflected in the map below, Figure 6, which presents U.S. Census

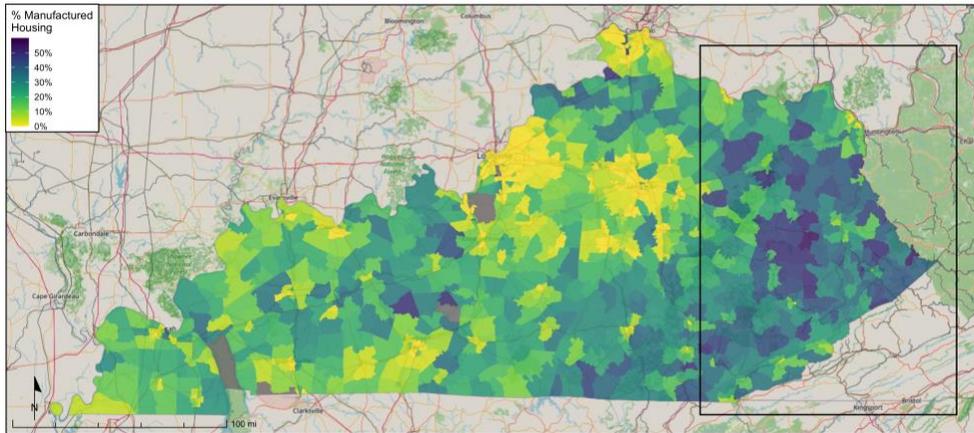
⁵⁰ Forest Bradley-Wright, *New Traction on Efficiency Programs for Manufactured Homes*, Southern Alliance for Clean Energy (Apr. 19, 2023), <https://www.cleanenergy.org/blog/new-traction-on-efficiency-programs-for-manufactured-homes/>.

⁵¹ *DOE Updates Mobile Home Efficiency Standards to Lower Household Energy Bills*, U.S. Dep't of Energy (May 18, 2022), <https://www.energy.gov/articles/doe-updates-mobile-home-efficiency-standards-lower-household-energy-bills>.

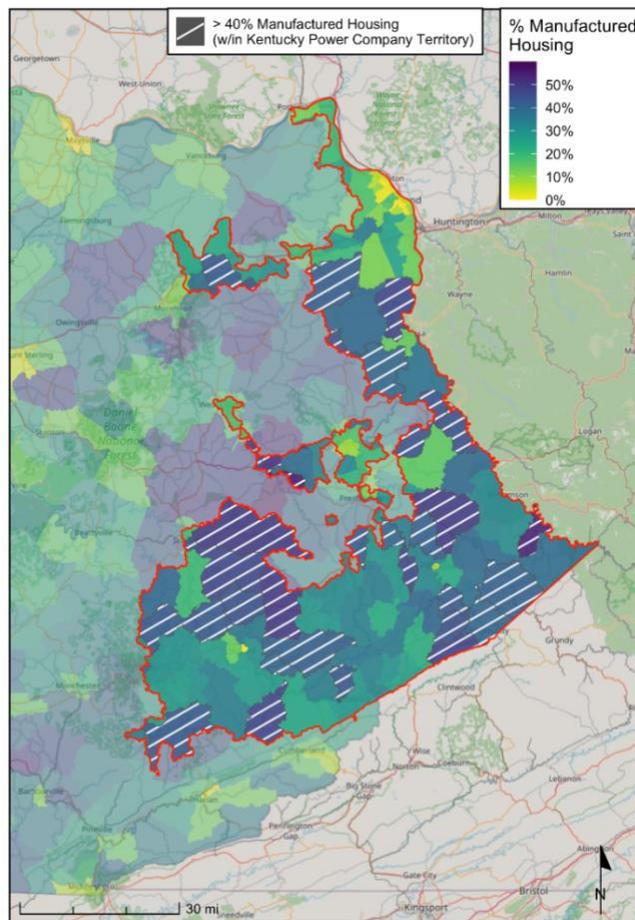
⁵² *Comparative Housing Characteristics [for Kentucky]*, U.S. Census Bureau (2022), [https://data.census.gov/table?q=housing+types+in+kentucky&t=Heating+and+Air+Conditioning+\(HVAC\):Physical+Characteristics&g=050XX00US21019&y=2022](https://data.census.gov/table?q=housing+types+in+kentucky&t=Heating+and+Air+Conditioning+(HVAC):Physical+Characteristics&g=050XX00US21019&y=2022).

1 Data, manufactured housing makes up over 40% of the housing stock in many areas of
2 Kentucky Power's territory.

3 **Figure 6. Prevalence of Manufactured Housing Statewide**
4 **and in Kentucky Power Service Territory**



5



6

reference map (c) OSM

1 On an average per square foot basis, manufactured homes have the highest energy
2 consumption compared to any other housing type, paying more than double the energy
3 cost. This energy burden is experienced by residential customers, as shown in the MPS,
4 where manufactured homes account for 31% of residential RAP savings potential.⁵³ Yet,
5 the MPS did not include any specifics regarding measures to address this type of housing.

6 The Company should explore the addition of a pilot that offers rebates for the purchase of
7 new energy-efficient manufactured housing, particularly for those looking to upgrade
8 their current homes and in situations where the existing manufactured home has barriers
9 to receive energy efficiency upgrades. Through working with both manufactured home
10 manufacturers to determine rebate levels and minimum requirements, and other partners
11 in the state and nationally, the Company can enhance the stock and affordability of
12 manufactured housing in the service territory. Development of a manufactured housing
13 efficiency program would be supportive of the Manufactured Housing and Energy
14 Efficiency Affordability Initiative, which the Kentucky Office of Energy Policy has
15 committed to, and is designed to develop best practices for addressing various parts of
16 manufactured housing, including high heating and cooling costs and improving the
17 availability of affordable and energy-efficient housing options.⁵⁴ I encourage the
18 Company to respond as part of its rebuttal testimony as to whether it would be feasible to
19 explore this pilot as part of their portfolio.

⁵³ Nolen Direct, Ex. BLN-1 at 34 of 123, Figure 4-5.

⁵⁴ Nat'l Assoc. of State Energy Officials, *Manufactured Housing*,
<https://www.naseo.org/issues/buildings/manufactured> (last visited August 4, 2024).

1 **Q. Please explain your recommendation related to smart thermostats.**

2 A. The Company is proposing smart thermostat rebates through the HEIP and should plan
3 for demand response potential that investment creates. I support the proposed smart
4 thermostat rebates, but it would be unreasonable for the Company to overlook the
5 potential to develop a smart thermostat demand response program. In addition to energy
6 savings, smart thermostats, when enabled with demand response capabilities, can allow
7 for HVAC units to participate in demand response programs. Typically, smart thermostat
8 demand response programs do very well in cost-effectiveness tests, as for example with
9 Duke Energy Kentucky’s program called “Power Manager,” which reportedly has
10 consistently strong cost-effectiveness results under the TRC, UCT, and RIM tests.⁵⁵ But
11 the Company did not explore a demand response program as part of its MPS and did not
12 include demand response as part of its proposed portfolio. Demand response is a way to
13 provide reliability, and capacity savings for both participants and non-participants year-
14 round, depending upon the program structure. By proactively identifying smart
15 thermostats with the same capabilities, the Company could add a demand response
16 program later in its portfolio, using technology it has already deployed, with customer
17 opt-in.

18 Demand response programs can help to lower overall peak and to offset peaks related to
19 both summer and winter HVAC demand. For example, Georgia Power currently offers a

⁵⁵ Filing of the Annual Status Report, Adjustment of the DSM Cost Recovery Mechanism, and Amended Tariff Sheets for Gas Rider DSMR (Sheet No. 62) and Electric Rider DSMR (Sheet No. 78), *In re Annual Cost Recovery Filing for Demand-Side Management by Duke Energy Kentucky, Inc.*, Case No. 2023-00354, at Appendix B (Nov. 15, 2023) https://psc.ky.gov/pscecf/2023-00354/e.rolfes-adkins%40duke-energy.com/11152023035331/2023-00354_Application.pdf; Filing of the Annual Status Report, Adjustment of the DSM Cost Recovery Mechanism, and Amended Tariff Sheets for Gas Rider DSMR (Sheet No. 62) and Electric Rider DSMR (Sheet No. 78), *In re Annual Cost Recovery Filing for Demand-Side Management by Duke Energy Kentucky, Inc.*, Case No. 2022-00398, at Appendix A (Nov. 15, 2022) https://psc.ky.gov/pscecf/2022-00398/e.rolfes-adkins%40duke-energy.com/11152022040223/2022-00398_Annual_DSM_Application.pdf.

1 demand response program specifically to customers with heat pumps, through a program
2 called Temp Check.⁵⁶ The program calls a maximum of 10 events each season, with
3 summer running from June 1 through September 30 and winter is from December 1
4 through March 31. Customers receive a rebate for being enrolled in the program to have
5 their heat pump cycled during either season to reduce demand. The Company should
6 evaluate how the addition of a demand response program can maximize the HEIP smart
7 thermostat rebate investment and potentially reduce or defer future supply-side resource
8 needs.

9 **V. COST RECOVERY**

10 **Q. Please explain the cost recovery methods that the Company is proposing as part of**
11 **its application.**

12 A. The Company is proposing the same three-pronged approach to cost recovery that it had
13 for its prior DSM plan. The three-pronged approach includes:

- 14 • Program implementation expenses. For this the annual surcharge is trued-up to
15 reflect the difference between the DSM revenue collected during the prior year
16 compared to actual expenses in that year and the projected DSM Plan costs for
17 the upcoming year.
- 18 • Net lost revenue. The nature of energy efficiency programs typically results in
19 reduced energy sales.⁵⁷ The Company is paid for the loss in revenues associated
20 with the savings for installed measures for up to three years from year of install
21 or until the effective date of rates approved in a base rate proceeding.

⁵⁶ Georgia Power, *Temp Check Information Page*, <https://www.georgiapowertempcheck.com/> (last visited Aug. 20, 2024).

⁵⁷ The addition of decarbonization and electrification measures to energy efficiency portfolios can increase electric revenues; however, that is likely not the case with the measures proposed in this portfolio.

- Shared-savings incentive. The Company receives an incentive payment equivalent to 15% of the estimated net savings achieved by the program.⁵⁸

Q. Do you believe that the cost recovery mechanism is clearly defined?

A. No. My primary concern is regarding the shared-saving incentive. It is not clear, based upon the description in the tariff sheet, how the Company calculates the shared-savings incentive. In the tariff sheet, it states that:

Incentives are a shared-savings incentive plan consisting of one of the following elements: The efficiency incentive, which is defined as 15 percent of the estimated net savings associated with the programs. Estimated net savings are calculated based on the California Standard Practice Manual’s definition of the Total Resources Cost (TRC) test, or the maximizing incentive which is defined as 5 percent of actual program expenditures if program savings cannot be measured.⁵⁹

This does not define what is included in the estimated net savings, nor does it provide the calculation to determine the incentive level. Furthermore, Exhibit SEB-6, the Demand Side Management Status Report as of December 31, 2023, appears to contradict the shared-savings incentive, as it states:

The efficiency incentive is the product of the number of participants for the month and the efficiency rate (\$/participant). The maximizing incentive is calculated as 5% of actual program cost for the month.⁶⁰

If the Commission determines that the shared-savings incentive should continue as proposed by the Company, then I recommend that the tariff be revised to include language identifying the contributions to the net savings (avoided transmission and distribution costs and energy savings) and detail the calculation that is used to determine

⁵⁸ Bishop (Wolfram) Direct at 6.

⁵⁹ Bishop (Wolfram) Direct, Ex. SEB-1, at 1.

⁶⁰ Bishop (Wolfram) Direct, Ex. SEB-6, at 2.

1 the level of incentive paid to the Company. Additionally, I recommend that the shared
2 savings be calculated based upon actual net savings achieved and not estimated savings.

3 **Q. Do you have additional concerns about the Company’s approach?**

4 A. Yes, although the basic three-pronged approach to cost recovery is not uncommon, there
5 may be important refinements necessary to the Company’s application of this approach.
6 Many utilities are authorized to receive program cost recovery, net lost revenues (if not
7 decoupled), and an incentive for implementing the programs. While this approach to cost
8 recovery is common, it is usually implemented differently than as proposed by the
9 Company in important ways. I recognize that historically cost recovery was awarded this
10 way by the Commission; but also, that the Commission had a concern in the past about
11 the Company’s escalating DSM surcharges. More generally, just as DSM programs
12 evolve, so should the cost recovery methodologies. Later in this section, I will walk
13 through my recommended cost recovery adjustments for the Commission’s consideration.

14 *A. Reviewing Case No. 2017-00097*

15 **Q. What concern did the Commission previously have with Kentucky Power’s DSM
16 surcharges?**

17 A. I was not involved in these proceedings, but it is my understanding that in 2016 the
18 Commission expressed concern about increasing DSM plan costs and committed to
19 “greater scrutiny” of “all future DSM filings.”⁶¹ Early the following year, members of the

⁶¹ Order, *In re Electronic Application of Duke Energy Kentucky, Inc. to Amend Its Demand Side Management Programs*, Case No. 2016-00289, at 15 (Jan. 24, 2017), https://psc.ky.gov/pscscf/2016%20Cases/2016-00289/20170124_PSC_ORDER.pdf (“The Commission is concerned about the increasing number of utility DSM programs and the associated increase in costs to ratepayers, particularly as the costs of the programs are borne by all customers in a rate class and are not limited to the participants in the DSM programs. Therefore, the Commission will apply greater scrutiny in its review of all future DSM filings, with a particular emphasis on reviewing the cost-effectiveness of each program and measure.”).

1 legislature introduced Joint Resolution 109, directing the Commission to re-examine the
2 reasonableness of Kentucky Power’s rate increases more generally, and particularly
3 noting the economic challenges facing eastern Kentucky.⁶² Not long after that, customers
4 noted significant bill increases after a January 2017 increase in the DSM surcharge rate,
5 and in February 2017, the Commission opened an investigation into the reasonableness of
6 Kentucky Power’s DSM plan.⁶³

7 At the time, Kentucky Power was in its third year of implementing increased program
8 budgets, reaching program budgets of \$6 million annually by 2016, as the result of a
9 settlement wherein the Company acquired the Mitchell Generating Station.⁶⁴

10 A DSM plan approval and associated rate increase had been approved on December 29,
11 2016, granting Kentucky Power’s requested increases for residential and commercial
12 customers.⁶⁵ For residential customers, the DSM surcharge rate increased from
13 \$0.003159/kWh to \$0.008013/kWh, increasing the average monthly bill for a residential

⁶² House Resolution No. 109, 2017 Regular Session (introduced Feb. 17, 2017),
https://apps.legislature.ky.gov/recorddocuments/bill/17RS/hjr109/orig_bill.pdf.

⁶³ E.g., Order, *In re Electronic Investigation of The Reasonableness of the Demand Side Management Programs and Rates of Kentucky Power Company*, Case No. 2017-00097 (Feb. 23, 2017), at
1, https://psc.ky.gov/pscscf/2017%20Cases/2017-00097//20170223_PSC_ORDER.pdf.

⁶⁴ Order, *In re Application of Kentucky Power Company for (1) a Certificate of Public Convenience and Necessity Authorizing the Transfer to the Company of an Undivided Fifty Percent Interest in the Mitchell Generating Station and Associated Assets; (2) Approval of the Assumption by Kentucky Power Company of Certain Liabilities in Connection with the Transfer of the Mitchell Generating Station; (3) Declaratory Rulings; (4) Deferral of Costs Incurred in Connection with the Company's Efforts to Meet Federal Clean Air Act and Related Requirements; and (5) All Other -Required Approvals and Relief*, Case No. 2012-00578, at 36 (Oct. 7, 2013),
https://psc.ky.gov/pscscf/2012%20Cases/2012-00578/20131007_PSC_ORDER.pdf; Case No. 2017-00097, Jan. 18, 2018 Order at 1–2.

⁶⁵ Order, *In re Application of Kentucky Power Company for (1) Authority to Expand Its Appliance Recycling Program to Include Commercial Customers; (2) Authority to Recover Costs and Net Lost Revenues, and to Receive Incentives Associated with the Implementation of the Programs; (3) Report in Compliance with the Commission's March 11, 2015 Order in Case No. 2015-00271 Regarding Industrial Customers; (4) Leave to Dispense with Filing Monthly DSM Reports; and (5) All Other Required Approvals and Relief*, Case No. 2016-00281, at 11 (Dec. 29, 2016) https://psc.ky.gov/pscscf/2016%20Cases/2016-00281//20161229_PSC_ORDER.pdf.

1 customer using 1,324 kWh/month from \$4.18/month to \$10.61/month, which is
 2 equivalent to an annual increase of \$77.16.⁶⁶

3 **Q. Was that increase large in your view?**

4 A. Yes, that is a very significant year-to-year increase in a surcharge rate, and the bill impact
 5 was likely a real hardship for the Company’s customers, particularly those I identified
 6 previously with high energy burdens ranging from 6% to 18%. The table below
 7 reproduces a summary of each adjustment to the Company’s surcharge, from April 2007
 8 through January 2017, as reported by the Company in the 2017 DSM Investigation
 9 proceeding.⁶⁷

10 **Table 4. Kentucky Power DSM Surcharge History (2010–2017)**

Effective From	Until	Residential Surcharge Factor	Residential Charge	Commercial Surcharge Factor	Commercial Charge
Oct. 2010	May 2011	\$ 0.001612	\$ 1.98	\$ 0.000062	\$ 0.08
June 2011	Jan. 2012	\$ 0.000774	\$ 0.95	\$ 0.000558	\$ 0.69
Feb. 2012	May 2012	\$ 0.000849	\$ 1.04	\$ 0.001529	\$ 1.88
June 2012	June 2013	\$ 0.000826	\$ 1.02	\$ 0.000538	\$ 0.66
July 2013	June 2014	\$ 0.002145	\$ 2.64	\$ 0.000825	\$ 1.01
July 2014	Feb. 2015	\$ 0.001447	\$ 1.78	\$ 0.000986	\$ 1.21
March 2015	March 2016	\$ 0.000383	\$ 0.47	\$ 0.001473	\$ 1.81
April 2016	Dec. 2016	\$ 0.003159	\$ 3.89	\$ 0.001835	\$ 2.26
Jan. 2017		\$ 0.008013	\$ 9.86	\$ 0.004206	\$ 5.17

11 **Q. Why did the surcharge increase to that level?**

12 A. At the time, Kentucky Power “agree[d] that much of the increase in the 2017 DSM factor
 13 resulted from the need to recover prior under-recoveries.”⁶⁸ That agreement came on

⁶⁶ Case No. 2017-00097, Feb. 23, 2017 Order at 2.

⁶⁷ Case No. 2017-00097, Response of Kentucky Power Company to Sierra Club’s First Set of Data Requests, Question 13, KPCO_R_SC_1_13_Attachment1.xls (May 5, 2017), https://psc.ky.gov/pscecf/2017-00097/jkrosquist%40aep.com/05052017040753/KPCO_R_SC_1_13_Attachment1.xls.

⁶⁸ Case No. 2017-00097, Rebuttal Testimony of Ranie K. Wohnhas on behalf of Kentucky Power Company, at 11 (Dec. 13, 2017) (“Wohnhas Rebuttal”), https://psc.ky.gov/pscecf/2017-00097/ajelliott%40aep.com/12132017062731/KPCO_RT_RKW_12132017.pdf.

1 rebuttal after Witness Grevatt,⁶⁹ on behalf of the Sierra Club, offered the following
2 observations:

3 Based on my review of the Company’s discovery responses in this
4 investigation and prior DSM filings, and as confirmed by the Company’s
5 November 15, 2017 filing, **the primary driver of the increased DSM**
6 **rates is past under-collection.**⁷⁰

7 The Company’s own analysis and reporting to this Commission in the 2017 Investigation
8 proceeding reached the same conclusions:

9 As of September 2017 Kentucky Power had recovered its earlier under-
10 recovery in connection with its residential programs through its current
11 residential D.S.M. factor. **This under-recovery produced much of the**
12 **increase in the Company’s residential D.S.M. factor identified by the**
13 **Commission in its Order establishing this investigation.** The
14 unrecovered D.S.M. program charges used to calculate the current D.S.M.
15 residential factor (including the forecast for the second half of 2016)
16 totaled \$6,818,082.⁷¹

17 That under-collection amount the Company sought to recover through higher DSM rates
18 was more than the Company’s highest annual program cost.

19 **Q. Does having such a significant under-collection amount mean there was a problem**
20 **with how the Company calculates its surcharge?**

21 A. Not necessarily. But in this instance, in order to reduce rate volatility, the Company did
22 identify and agree to make certain changes to the method for calculating its DSM
23 surcharge factors. The Company’s witness summarized how the “new calculation
24 incorporates two modifications to reduce volatility”:

⁶⁹ Jim Grevatt is also a member of my firm, Energy Futures Group.

⁷⁰ Case No. 2017-00097, Direct Testimony of Jim Grevatt on Behalf of Beverly May, Jim Webb, and Sierra Club, at 12 (Nov. 22, 2017) (“Grevatt Direct”) (emphasis added), https://psc.ky.gov/pscecf/2017-00097/childerslaw81%40gmail.com/11222017013847/2017.11.22_Grevatt_Testimony_and_Affirmation.pdf.

⁷¹ Case No. 2017-00097, Kentucky Power Company’s Status Report, Motion for Leave to Make the Company’s November 15, 2017 D.S.M. Filing in this Case, and Motion for Leave to File Proposed Tariffs Following Approval of 2018 D.S.M. Factors, at 3–4 (Nov. 15, 2017) (emphasis added), https://psc.ky.gov/pscecf/2017-00097/slsharp%40aep.com/11152017031905/KPCO_M_111517.PDF.

1 (1) Previously the Company used the midpoint between a “floor” rate,
2 consisting of the carryover from the prior program year, and the ceiling
3 rate, consisting of full program costs, as its proposed DSM rate. Beginning
4 with its November 15, 2017 filing the proposed DSM rate is calculated by
5 adding any under-recovery or over recovery from the prior program year
6 plus estimated expenses for the upcoming program year and dividing that
7 sum by forecasted sales for the upcoming program year. Doing so should
8 permit the Company to limit the over-recoveries and under-recoveries and
9 more closely align the amount collected to the amount to be collected.

10 (2) By using a calendar year of forecasted sales to calculate the DSM rate,
11 instead the shorter period used in the past, the Company’s new calculation
12 further limits volatility by more closely aligning the rate to the period it
13 will be in effect.⁷²

14 In addition to these two changes, Witness Grevatt made the following recommendation:

15 determine forward-looking DSM rates that represent the expected amount
16 of collections needed, based on the expected program costs, lost revenues,
17 and incentives, with a true up process for making small adjustments to
18 account for any under- or over-collections that were made. Unlike the
19 current backward-looking process, I believe that this would provide a
20 much higher level of rate stability and transparency. With stable DSM
21 rates based on expected DSM costs in place, a true-up adjustment to the
22 DSM rates can be made on an annual basis when the Company reports its
23 evaluated savings and expenditures.⁷³

24 **Q. Are these modifications reflected in the Company’s approach to calculating the**
25 **proposed DSM surcharge factors in the case?**

26 A. That is something it would be helpful for the Company to clarify. There have been
27 inconsistent references on that point, with the Company sometimes claiming that the
28 surcharge calculation approach has not changed since the nineties,⁷⁴ while at other times

⁷² Case No. 2017-00097, Wohnhas Rebuttal at 12.

⁷³ Case No. 2017-00097, Grevatt Direct at 20–21.

⁷⁴ *E.g.*, Bishop (Wolffram) Direct at 6 (referring to cost recovery proposal as “consistent with the Company’s past Commission-approved practice,” but without further detail); KPC Response to JI Q1.33 (explaining that net lost revenue determinations are consistent with 1995 application).

1 claiming that the calculation advanced here is the same as that used “since at least
2 2017.”⁷⁵

3 **Q. Is there anything else that it would be helpful for the Company to clarify with
4 respect to the 2017 surcharge increase?**

5 Yes, some of the information provided in response to data requests in this proceeding
6 appears to conflict with the record in the 2017 Investigation case. In perhaps the most
7 significant example, Witness Wolfram relayed that “[t]he Company does not believe the
8 previous under-recovery issue was a result of how the recovery mechanism was designed;
9 instead, the previous under-recovery was largely due to an increase in DSM spending
10 between annual filings that was agreed to as part of the settlement in Case No. 2012-
11 00578.”⁷⁶ This seems to contradict the Company’s evidence in the 2017 Investigation
12 case. Mr. Wolfram was not involved in that 2017 proceeding,⁷⁷ and it appears that he did
13 not perform any reanalysis of the issue.⁷⁸

14 The analyses that were done at the time appear to disprove the claim that increasing
15 program costs were a large driver of the surcharge increase. The program budgets did
16 increase by 74% over three years, 2014 to 2016.⁷⁹ But the surcharge increased by
17 275%.⁸⁰ And the surcharge spiked higher than would be necessary to sustain a \$6 million

⁷⁵ E.g., KPC Response to JI Q2.29(e) (“Company is not proposing to change the methodology or the calculation of its DSM surcharge . . . The current methodology has been reviewed and approved by this Commission since at least 2017.”).

⁷⁶ KPC Response to JI Q1.75.

⁷⁷ KPC Response to JI Q2.15.

⁷⁸ KPC Response to JI Q2.15(b) (explaining that Witness Wolfram only reviewed the “procedural history of the Company’s prior DSM programs” and offers no documentation in response to a request for analysis and workpapers supporting his claim that program budgets were a large driver of the DSM rate increase).

⁷⁹ KPC Response to JI 2Q.15(c).

⁸⁰ Case No. 2017-00097, KPC Response to Sierra Club Request 1-13, Attachment 1 (residential DSM rate from July 2013 to June 2014 was \$0.002145 and increased to \$0.00813 in January 2017).

1 program cost: The Company estimated that, if there were no under- or over-collection,
 2 maintaining a \$6 million annual program, with recovery of net lost revenues and
 3 incentives, would necessitate a residential DSM surcharge factor of \$0.002071/kWh—
 4 significantly *lower* than the surcharge factor in 2017, as shown in the table below.

5 **Table 5. Residential Surcharge Factor and Average Bill Impact:**
 6 **Summary and As-Proposed⁸¹**

Case No.	Effective From	Until	Residential Surcharge Factor	Monthly Charge with Avg. Usage of 1,230 kWh*
2012-00367	July 2013	June 2014	\$ 0.002145	\$ 2.64
2013-00487	July 2014	Feb. 2015	\$ 0.001447	\$ 1.78
2014-00271	March 2015	March 2016	\$ 0.000383	\$ 0.47
2015-00271	April 2016	Dec. 2016	\$ 0.003159	\$ 3.89
2016-00281	Jan. 2017		\$ 0.008013	\$ 9.86
2017-00097	Kentucky Power’s Estimated Rate to Maintain \$6M annual program spend ⁸²		\$ 0.002071	\$ 2.55
2024-00115	Estimated / Proposed 2025 Rate ⁸³		\$ 0.000644	\$ 0.79

7 The estimated 2025 residential surcharge factor is also provided above for reference. As a
 8 check against volatility under the proposed or recommended budget levels, the Company
 9 should provide estimates of how the surcharge factors will change year-to-year as net lost
 10 revenue recovery increases due to the compounding nature of the savings. For the first
 11 three years, at a minimum, this element of the surcharge will have an increasing impact
 12 as the savings increases to include three years’ worth of savings, or there is an

⁸¹ Case No. 2017-00097, KPC Response to Sierra Club Request 1-13, Attachment 1.

⁸² Case No. 2017-00097, Grevatt Direct at 12.

⁸³ Application of Kentucky Power Company, *In re Electronic Application Of Kentucky Power Company For: (1) Approval To Expand Its Targeted Energy Efficiency Program; (2) Approval Of A Home Energy Improvement Program And A Commercial Energy Solutions Program; (3) Authority To Recover Costs And Net Lost Revenues, And To Receive Incentives Associated With The Implementation Of Its Demand-Side Management/Energy Efficiency Programs; (4) Approval Of Revised Tariff D.S.M.C.; (5) Acceptance Of Its Annual DSM Status Report; And (6) All Other Required Approvals And Relief*, Case No. 2024-00115, at 9-10 (2025 proposed rates are estimated based on information available at the time, and will be updated and filed with Commission in November 2024).

1 intervening base rate case. However, if the savings achieved on an annual basis reaches
2 an equilibrium, then the impact from the net lost revenues should remain stable after the
3 third year of reaching the equilibrium.

4 ***B. Net Lost Revenues***

5 **Q. Can you explain the purpose of allowing recovery of “lost revenues” resulting from
6 energy efficiency programs?**

7 A. In the short run, efficiency savings can result in a decline in energy sales, which in turn
8 reduces the utility’s ability to recover fixed costs for providing electric service. Recovery
9 of those “lost revenues” allows a utility to recoup their fixed costs despite savings from
10 efficiency programs causing sales, and revenue, to decline. Net lost revenues recovered
11 from customers should reflect the verified energy savings attributable to a utility-funded
12 efficiency program multiplied by a rate adequate to compensate the utility for its fixed
13 costs, as approved in its most recent base rate case.

14 **Q. Why should net lost revenues reflect verified energy savings?**

15 A. The goal of net lost revenues is to make sure that the Company has the ability to recover
16 its fixed costs despite having lost revenue through the implementation of its efficiency
17 programs. To do that, we need to know what savings—or lost sales—actually happened
18 as a result of a utility program. Verified savings can be done through an evaluation,
19 measurement, and verification (“EM&V”) process, review of billing usage, and/or
20 assumed savings on the measures installed as a result of the utility program funding.

1 One way to assess the reasonableness of the lost revenue collection is to compare the lost
2 revenues as a percentage of the DSM plan investment. Most utilities collect annual lost
3 revenues equivalent to one percent of annual energy efficiency costs.⁸⁴

4 Ensuring fairness and to prevent overcollection from customers related to lost revenues, it
5 is vital to have an established EM&V process that is agreed upon by all parties, including
6 the Commission, the Company, and stakeholders. The evaluation process will ensure that
7 the savings assumptions are verified and transparent.

8 **Q. Are net lost revenues a cost of DSM?**

9 A. Not really, no. The program spending is a cost of DSM; that spending is an expense
10 incurred to produce an object, service, or outcome. Net lost revenues are different. There
11 is no new expense incurred; and the utility's fixed costs are unchanged, as approved in
12 the most recent base rate case. Furthermore, lost revenues should only be related to
13 recovering fixed costs that were not collected due to a customer's participation in the
14 utility DSM plan and measures funded by said portfolio. For instance, savings resulting
15 from the WAP outside of the TEE investment should not be captured as part of the lost
16 revenues and should instead be addressed through a base rate case.

⁸⁴ Annie Gilleo et al., *Valuing Efficiency: A Review of Lost Revenue Adjustment Mechanisms*, ACEEE, at vi (June 2015), <https://www.aceee.org/sites/default/files/publications/researchreports/u1503.pdf>.

1 *C. Observations and Recommendations*

2 **Q. Before you provide your recommended cost recovery, do you have any concerns**
3 **with the current methodology for the savings used to determine net lost revenues**
4 **and net benefits?**

5 A. Yes. Related to net lost revenues and net benefits, I have several concerns around the
6 savings calculations. First, it appears that the forecasted net lost revenues are based on
7 average savings, regardless of the measures that are implemented and regardless of the
8 funding source.⁸⁵ For the TEE Program, the Company continues to rely on a 2015
9 estimate of average household savings,⁸⁶ and the Company appears to not have
10 performed any additional studies of actual TEE Program savings since.⁸⁷ This is
11 concerning as federal cooling and heating efficiency requirements for air conditioners
12 and heat pumps were adjusted in 2023, among other efficiency standards.⁸⁸ The Company
13 should be aware of baselines to adjust for the claimed savings of installed measures.
14 Furthermore, these savings have not been verified through an evaluation process or
15 evaluated in recent years, therefore the Company could be over- or under-claiming
16 energy savings associated with the net lost revenues.

17 Additionally, the Company appears to be claiming savings for the TEE program
18 regardless of the amount of investment into the home or the measures installed. For
19 example, in Revised Exhibit SEB-2, the Lost Revenue is calculated as multiplying one

⁸⁵ Bishop (Wolffram) Direct, Revised Ex. SEB-2 (reflecting consistent savings estimate for TEE Program participants year-to-year); KPC Response to JI Q2.20 (claiming that the Company does not have data on measures installed at each participating household or savings from those measures).

⁸⁶ KPC Response to JI Q1.10.

⁸⁷ KPC Response to JI Q2.20c (2015 evaluation identified in response to JI Q1.10 “was the only evaluation performed for the TEE Program in the last four years”).

⁸⁸ *Efficiency requirements for residential central AC and heat pumps to rise in 2023*, U.S. Energy Information Administration (July 30, 2019), <https://www.eia.gov/todayinenergy/detail.php?id=40232>.

1 net energy savings value by the number of participants, multiplied by the net loss
2 revenue. While an average can be used to forecast future net loss revenue, there should be
3 actual savings to true up the prior year's estimated net loss revenue. Furthermore, it's
4 unclear as to whether the Company is claiming TEE Program savings for the measures
5 the program funded *and* additional energy savings achieved through WAP funded
6 measures.⁸⁹ If that is indeed how the Company is claiming TEE program savings for
7 purposes of net lost revenue recovery, then the Company's DSM surcharge would collect
8 more net lost revenue than it is entitled to based on its TEE program investments. In
9 recognition that some measures may be co-funded, the Company could also use a cost
10 allocation of the savings based on their percentage of the funding of the project. In review
11 of the Company's response to KPSC 1-1, Attachment 1, based upon 382 jobs, Kentucky
12 Power contributed a range of 4% to 100% of the cost per weatherized home, averaging
13 38% of the cost per weatherized home. Given the range, the level of cost allocated
14 savings should be done on a per-project basis to properly account for the program savings
15 and the loss revenues.

16 The Company should ensure, and the Commission should require, that net lost revenues
17 are recovered for only savings attributable to the Company's own program spending and
18 only for verified savings. I would also recommend that the Company be more transparent
19 around the assumptions used to calculate the net lost revenues and net benefits.

20 **Q. Do you have any concerns related to the shared-savings incentive?**

21 A. Yes. By using net benefits to determine the shared-savings incentive level, the Company
22 is being rewarded simply for having DSM programs, rather than achieving specific goals

⁸⁹ KPC Response to JI Q2.21; *see also* KPC Response to Staff Q1.1, Attach. 1.

1 related to energy efficiency and demand response. Incentives tied to performance can
2 drive program achievements and results to support various policy goals. In this case, the
3 Company does not have an incentive to achieve or exceed its energy savings within
4 budget.

5 **Q. Please provide your recommendation related to incentives.**

6 A. I recommend that the Commission adjust the shared-savings incentive to be a
7 performance management incentive that rewards the Company for achieving various
8 goals based upon the established budget. For example, in Connecticut the utilities cannot
9 receive an incentive until they achieve at least 75% of the savings projected (combined
10 energy savings and demand), as well as meet secondary metrics such as a certain number
11 of homes insulated and commercial projects in environmental justice communities, based
12 upon the approved budget.⁹⁰ The utilities can achieve incentives for surpassing their goal,
13 up to 125% This actual incentive is a pre-tax percentage based upon the level of spending
14 required for that utility to achieve those goals. For example, if 75% of the savings/metric
15 is achieved, then the Company would be eligible to receive 2.5% of the budget expended
16 to achieve that level of savings. The metrics are determined on an annual basis and based
17 upon prior performance and approved plan forecasts. A list of the metrics established in
18 Connecticut is provided in Exhibit SLS-3.⁹¹

19 To establish a performance management incentive for the Kentucky Power portfolio, the
20 performance incentives should be based on 75% to 125% of the approved energy and

⁹⁰ 2024 Plan Update to Connecticut's 2022-2024 Conservation and Load Management Plan, Submitted by Eversource Energy, United Illuminating, Connecticut Natural Gas Corporation, and Southern Connecticut Gas to Connecticut Dep't of Energy and Env'tl. Protection, at 173 (Mar. 14, 2024), <https://app.box.com/s/sm05qydfg2xf3n770ek4a54aj40ov9c>.

⁹¹ *Id.*, App'x E (Attached as Exhibit SLS-3).

1 demand savings in that program year. Table 6 below provides an illustrative example of
 2 how the potential incentive levels can be based upon performance. The pre-tax
 3 percentages that are ultimately established can and should be negotiated and approved by
 4 the Commission. Based upon the current portfolio, it would result in a utility incentive
 5 ranging from \$43,322 to \$112,637, using the current budget of \$1.7 million. In addition
 6 to establishing a primary metric based upon savings achievements, I recommend that the
 7 Company work with stakeholders to establish secondary metrics that could be added to
 8 the second year of the portfolio.

9 **Table 6. Illustrative Performance Incentive Structure**

Performance Percentage Minimum	Pre-Tax Percentage	Pre-Tax Incentive
75%	2.50%	\$ 43,322
85%	3.50%	\$ 60,651
95%	4.50%	\$ 77,979
100%	5.00%	\$ 86,644
105%	5.50%	\$ 95,308
115%	6.00%	\$ 103,973
125%	6.50%	\$ 112,637

10
 11 **Q. Have the Companies provided an estimate for the surcharge over all three proposed**
 12 **program years?**

13 A. No. Joint Intervenors did ask for those estimates, but the Company has not performed that
 14 calculation or analysis and objects to performing that calculation or analysis.⁹²

⁹² KPC Response to JI Q2.11.

1 **Q. In your view, would it be reasonable for the Company to provide an estimate of the**
2 **surcharge over the proposed program term?**

3 A. While I am not aware of any requirement that the Company provides this information, I
4 do think it would be reasonable for Kentucky Power to offer those estimates, particularly
5 in light of surcharge volatility previously experienced. The Company certainly is capable
6 of estimating future surcharge factors, and while calculations will change over time, an
7 estimate may still be useful in assuring the Commission and stakeholders of the
8 reasonableness of Kentucky Power's proposed DSM plan cost recovery methodology and
9 calculation approach.

10 **Q. Please summarize your recommendations related to cost recovery.**

11 A. I recommend that the Commission consider the following cost recovery methodology for
12 Kentucky Power's DSM programs.

13 1. DSM plan cost recovery mechanism should not be changed, so long as it does
14 include reasonable adjustments to guard against rate volatility.

15 2. Net lost revenues should be based upon evaluated and verified savings from
16 measures actually installed and should include only the savings attributable to
17 Kentucky Power DSM program investments.

18 3. Incentive provided to the utility when it achieves 75% to 125% of the Commission
19 approved energy and demand savings for the DSM Plan. The incentive would be
20 calculated as up to 5 percent of the portfolio costs. After the first year of the portfolio,
21 the incentive will also be based on the achievement of secondary metrics.

1 **VI. REPORTING RECOMMENDATIONS**

2 **Q. From your experience throughout the country, do you find the historical reporting**
3 **on the DSM programs by Kentucky Power to be sufficient?**

4 A. No, I do not. Recognizing that reporting is ever evolving, reporting should provide the
5 Commission, stakeholders, and the public with a clear picture of the performance of the
6 programs and how they compare to forecasts, identify any challenges and successes, and
7 summarize any potential changes. The reports should be transparent, easy to understand,
8 and formatted in a way to provide comparisons between reports. Kentucky Power’s
9 annual reporting on the programs does not provide an extensive narrative on the
10 programs’ progress.

11 **Q. What do you recommend to improve reporting transparency?**

12 A. I recommend that the Company work with stakeholders to develop a reporting template
13 for annual reporting that includes:

- 14 • Summary of overall savings and spending;
- 15 • Breakdown of total spending by cost category and individual program spending;
- 16 • Breakdown of program participation by zip code or census tract;
- 17 • Cost-effectiveness on plan and program level; and
- 18 • Reporting on program progress, achievements, successes, issues, and forecasted
19 changes.

20 As part of that work group, I recommend that other utility reporting templates are
21 explored, including, but not limited to Baltimore Gas and Electric’s reporting templates

1 for their EmPOWER Maryland programs⁹³ and Southwestern Electric Power
2 Cooperative's ("SWEPCO's") reporting on efficiency programs in Arkansas.⁹⁴ The
3 reporting templates should not only be in report form, but also available in a workbook
4 for ease of access to the data.

5 **VII. COLLABORATION RECOMMENDATIONS**

6 **Q. Please describe the level of collaboration related to the development of the DSM** 7 **Plan.**

8 A. To my knowledge, the Company conducted at least two stakeholder meetings prior to
9 filing its application in this case. One of these meetings, held on February 22, 2024,
10 included a presentation by GDS, explaining the Company's MPS. This section was then
11 followed by a presentation by Chris Woolery, who discussed the Jemez principles and
12 how to achieve meaningful collaboration. I am attaching Mr. Woolery's presentation as
13 Exhibit SLS-4. The Company and Joint Intervenors also came together to plan a one-day
14 in person workshop. The purpose of this workshop was to share knowledge, hear from
15 each other, and collectively brainstorm solutions to the issues that the Company's
16 customers face. Presentations were shared by the Company, by Joint Intervenors, and by
17 housing advocates, as well as other guest speakers, including employees from Duke
18 Energy (North Carolina) and Green Mountain Power (Vermont). Affordable housing
19 emerged as a main theme that was acknowledged by all participants.

⁹³ BGE's EmPOWER Maryland Report can be accessed through the www.psc.state.md.us website using Maillog No. 221689.

⁹⁴ SWEPCO, *Arkansas Energy Efficiency Program Portfolio Revised Annual Report* (revised May 31, 2023), <https://apsc.arkansas.gov/wp-content/uploads/07-082-TF-SWEPCO-2022-Annual-Report.pdf> (2022 annual report).

1 **Q. Did the Joint Intervenors find the collaboration ahead of the filing of the DSM Plan**
2 **application to be constructive?**

3 A. Yes. Joint Intervenors appreciated the opportunity to co-create the workshop agenda and
4 have conversations with the Company. As Mr. Woolery’s presentation highlights, these
5 steps moved the group from “tokenization” towards more meaningful and effective
6 collaboration. Joint Intervenors hope their collaboration continues in this way to help
7 develop and promote long-term DSM programs that will benefit Kentucky Power
8 customers.

9 **Q. Are there any changes that the Joint Intervenors would like to see embraced going**
10 **forward?**

11 A. Yes, I recommend that the Company begin collaborating with stakeholders earlier in its
12 process of DSM program development. The timing of the workshop in March
13 unfortunately did not give enough time for the Company to adjust its May DSM filing to
14 include the ideas discussed during the workshop sessions. Joint Intervenors are hopeful
15 that the collaboration that has been sparked by this DSM filing will continue with the
16 Company’s future DSM filings. Along with my other recommendations expanding the
17 Company’s proposed DSM program, I propose the continuation of collaboration between
18 the Company, Joint Intervenors, and the other stakeholders involved.

19 **Q. What proposed collaboration should take place as the DSM plan is implemented?**

20 A. In addition to the recommendations from the Joint Intervenors, as noted above, the DSM
21 plan will benefit from collaboration on pilots and annual review of the programs.
22 Furthermore, depending on the vendor/contractor network established by the program

1 implementor, the Company and its implementor should meet and train its contractor
2 network to establish consistent service and to maintain high customer satisfaction.

3 While the DSM program is implemented, the Company should continue to meaningfully
4 engage with Joint Intervenors and stakeholders at least quarterly. These quarterly
5 meetings should include updates from both the Company and other stakeholders. The
6 Company should share the status of the implementation of its DSM programs along with
7 any issues faced, and stakeholders can share how the implementation is going based on
8 the customers' experience. Through these meetings the Company and stakeholders can
9 continue to collaborate on solutions that address customer and Company concerns. The
10 agenda for these meetings should be co-created by both the Company and interested
11 stakeholders, and the meetings should either be facilitated by an independent outside
12 facilitator or co-facilitated by members from both the Company and stakeholder
13 representatives.

14 Prior to the next DSM filing, there should be another in-person workshop, held with
15 enough time before the filing to include the considerations and solutions discussed in the
16 workshop.

17 **Q. Do you have any recommendations for the development of the next three-year plan?**

18 A. Yes. As stated above, I recommend the Company continue to collaborate with Joint
19 Intervenors and the other stakeholders throughout the next three years through quarterly
20 meetings to both understand how the current DSM program is working and to plan for
21 any additions or improvements for the next filing. This collaboration should include
22 transparent and participatory planning for the next filing, including setting shared goals,

1 sharing inputs and assumptions for analyses, and creating timelines that are long enough
2 to allow for incorporation of feedback and changes.

3 VIII. CONCLUSION

4 **Q. Please summarize your recommendations.**

5 A. Overall, I recommend that the programs be expanded to allow for a reasonable level of
6 participation, closer to that proposed in the Company's MPS. An expanded portfolio, as
7 provided in my recommendations throughout this testimony, will increase the opportunity
8 for all ratepayers paying into the DSM surcharge to participate, even despite barriers and
9 extensive wait lists. Furthermore, these recommendations will increase the benefits
10 recognized by non-participants and further the efforts to achieve the Company's goal to
11 defer supply-side investments and increase reliability. A summary of my
12 recommendations and plan enhancements are provided below, again
13 grouped by overarching recommendations to improve the plan as a whole, specific
14 program recommendations, and cost-recovery related recommendations.

15 **Overarching Recommendations:**

16 The Company should undertake to, and the Commission should require, the
17 following general adjustments:

- 18 1. Develop a three-year plan that ramps up to achieve 0.2% energy efficiency
19 savings as a percent of 2022 sales.
- 20 2. Explore financing opportunities and identify financing partners to support
21 energy efficiency projects for both residential and commercial customers.
- 22 3. Develop a new manufactured housing pilot during the three-year plan.
- 23 4. Provide a transparent and clear reporting process, based upon feedback
24 from stakeholders.
- 25 5. Develop guidelines related to collaborative process for discussing the
26 DSM Plans.

1 **TEE Program Recommendations**

2 Regarding the TEE Program, the Commission should require the Companies to:

- 3 1. Work with the Community Action Agencies (“CAAs”) to determine
4 health and safety remediation cost estimates and reassess the sufficiency
5 of Kentucky Power’s funding contribution.
- 6 2. Reassess whether budget levels afford reasonable opportunities for income
7 eligible customers to participate in a residential energy efficiency
8 program, and evaluate ways to expand participation.
- 9 3. Target and prioritize customers with baseboard heating to receive high
10 winter efficiency heat pumps as a way to reduce a customer’s overall
11 energy usage, as well as the electric system’s winter demand.

12 **Home Energy Improvement Program Recommendations**

13 Regarding the Home Energy Improvement Program, the Commission should
14 require the Companies to:

- 15 1. Expand measure offering to include non-centralized equipment such as
16 window air conditioners and dehumidifiers, as a way to limit cost barriers
17 to participate in the program and to allow for participation by barriered
18 homes.
- 19 2. Provide enhanced rebates for low-to-moderate income customers to
20 broaden accessibility.
- 21 3. Require all smart thermostats rebated under the program to be demand
22 response capable.

23 **Commercial Energy Solutions Program Recommendations**

24 Regarding the CESP, the Commission should require the Companies to:

- 25 1. Provide enhanced rebates for small business customers under the CESP to
26 eliminate cost barriers for participation.
- 27 2. Provide additional documentation to support the proposed program
28 budget.

29 **Cost Recovery Recommendations**

30 The Commission should approve a cost recovery model that allows for:

- 1 1. Cost recovery for prudently incurred DSM Plan implementation costs;
- 2 2. Recovery of net lost revenues based on verified savings from measures
- 3 funded by the DSM Plan; and
- 4 3. Shared-savings incentives should be based on percentage achievement of
- 5 goals related to the program and not simply on offering of DSM programs.

6 **Stakeholder Collaboration Recommendations**

7 I recommend that the Company continue collaborating with the stakeholders, including

8 Joint Intervenors and other customer representatives, on the development and

9 implementation of its DSM programs. Specifically, I recommend the Commission direct

10 the Company to:

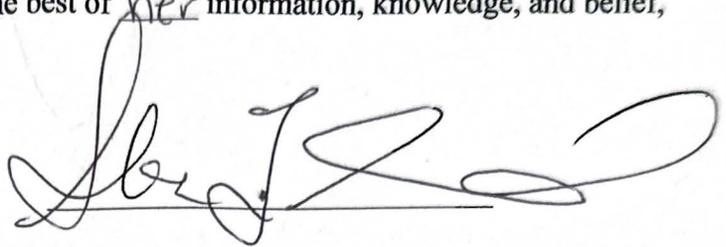
- 11 1. Begin stakeholder collaboration with an in-person workshop earlier in the
- 12 process of developing its next DSM Plan, in order to allow input from
- 13 stakeholders to meaningfully shape the plan.
- 14 2. Hold stakeholder meetings at least quarterly, with co-created agendas that
- 15 (i) setting shared goals, (ii) sharing inputs and assumptions for analyses,
- 16 and (iii) establishing timelines that allow for incorporation of feedback.

17 **Q. Does that conclude your testimony?**

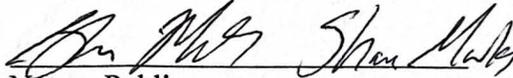
18 A. Yes.

VERIFICATION

The undersigned, Stacy Sherwood being first duly sworn, deposes and says that she has personal knowledge of the matters set forth in the foregoing testimony and that the information contained therein is true and correct to the best of her information, knowledge, and belief, after reasonable inquiry.



Subscribed and sworn to before me by 16th this 16th day of August, 2024.
Stacy Sherwood Sm 8/16/24


Notary Public

My commission expires: 4-4-2028

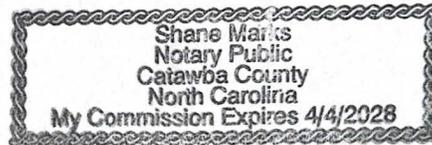


Exhibit SLS-1

Stacy Sherwood

Principal



Professional Summary

Stacy Sherwood brings over 15 years of experience in the energy industry, specializing in energy efficiency (EE), demand response (DR), automated metering infrastructure (AMI), cost recovery, and renewable energy. Stacy has testified or provided comments before the public service commissions of Kentucky, Louisiana, Maryland, and Missouri, the Kansas Corporation Commission, the Virginia State Corporation Commission, and the public utilities commissions of Maine, Pennsylvania and Rhode Island on AMI, EE, protections for cryptocurrency related load growth, and reasonableness of revenue increases. Throughout her career, Stacy has evaluated various electric and natural gas EE and DR plans; potential studies; evaluation, measurement, and verification reports; and riders for cost recovery. In particular, she has specialized in the design of low-income EE programs in Arkansas, Maryland, and Pennsylvania. Stacy has also testified in 15 cases related to the reasonableness of revenue requirements in Maine, Pennsylvania, and Rhode Island.

Since joining EFG in October 2021, Stacy has immersed herself in Connecticut's energy goals and policy and has established relationships with all stakeholders relevant to Connecticut's energy efficiency and demand response programs. She serves as the team lead and senior technical consultant on behalf of the Connecticut Energy Efficiency Board, which provides oversight of the state's energy efficiency programs. Through her work in Connecticut, Kentucky, and Maryland, she has evaluated the impacts of EE programs and other policies as it relates to environmental justice. More recently, she has begun providing support to jurisdictions on establishing a cost-benefit framework to evaluate distributed energy resources (DERs).

Experience

2024-Present: Principal, Energy Futures Group, Hinesburg, VT

2021-2023: Managing Consultant, Energy Futures Group, Hinesburg, VT

2015-2021: Senior Analyst, Exeter Associates, Inc., Columbia, MD

2013-2015: Assistant Director of Energy, Analysis, and Planning Division, Maryland Public Service Commission, Baltimore, MD

2011-2013: Regulatory Economist II, Maryland Public Service Commission, Baltimore, MD

2009-2011: Regulatory Economist I, Maryland Public Service Commission, Baltimore, MD

Education

B.A., Business Administration, Economics, Accounting/Economics, McDaniel College, 2009

Energy Futures Group, Inc

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Select Projects

- **Connecticut Energy Efficiency Board.** Lead Technical Consultant on the oversight of the state's electric and gas residential energy efficiency programs. Work closely with the state's utilities to develop, implement, and evaluate cost-effective program designs and goals for the Three-Year Conservation and Load Management Plan. (2021-Present)
- **Efficiency One (Nova Scotia).** Part of team leading a stakeholder Work Group in considering potential modifications to the province's benefit-cost analysis framework for energy efficiency, demand response and strategic electrification programs. (2023-Present)
- **Maryland Public Service Commission.** Part of team leading a stakeholder Work Group in considering potential modifications to the state's benefit-cost analysis framework and tests for energy efficiency, demand response, electrification storage and other distributed energy resource programs. (2023-2024)
- **Natural Resources Defense Council.** Worked with state level advocates to identify opportunities to design and implement the Inflation Reduction Act funds, including Greenhouse Gas Reduction Fund, Climate Pollution Reduction Grants, Green and Resilient Retrofit Fund, High-Efficiency Electric Home Rebate Act, and Home Efficiency Rebate Program. (2022-2023)
- **Natural Resources Defense Council.** Filed testimony before the Kansas Corporation Commission to support the adoption of energy efficiency programs for the first time in the Evergy service territory. Worked with parties to negotiate program design and implementation, as well as the performance incentive mechanism. (2021-2022)
- **Louisiana Public Service Commission.** Filed testimonies evaluating the reasonableness of automated metering infrastructure implementation plans by Concordia Electric Cooperative, Inc., Southwest Louisiana Electric Membership Corporation, and Point Coupee Electric Membership Corporation. (2020-2021)
- **Pennsylvania Office of Consumer Advocate.** Reviewed and commented on potential studies utilized to develop energy efficiency and demand response targets for Phase III and IV of the Act 129 Energy Efficiency and Conservation (EE&C) Program. Provided written testimony on utility EE&C five-year plans. (2015-2021)
- **Arkansas Attorney General's Consumer Utility Rate Advocacy Division.** Drafted a dedicated limited income EE program strawman implemented on a pilot basis by the electric and natural gas utilities. (2018-2020)
- **Arkansas Attorney General's Consumer Utility Rate Advocacy Division.** Participated in Parties Working Collaboratively (PWC) group regarding the electric and natural gas EE programs. Provided comments on three-year plans, annual progress reports, and evaluation, measurement, and verification reports. (2017-2021)

Energy Futures Group, Inc

- **U.S. Air Force Civil Engineer Center.** Evaluated the feasibility of geothermal energy production at Edwards Air Force Base. (2015-2016)
- **Maryland Public Service Commission Staff.** Developed templates and directed work groups related to the implementation of the electric and natural gas EmPOWER Maryland EE and DR programs. Evaluated the semi-annual reports and three-year plans filed by the utilities and submitted comments regarding plan recommendations before the Maryland Public Service Commission. (2009-2015)

Select Publications

- Author on Chapter 2.5 Environmental Justice, Final Report Concerning the Maryland Renewable Portfolio Standard as Required by Chapter 393 of the Acts of The Maryland General Assembly of 2017, <https://dnr.maryland.gov/pprp/Documents/FinalRPSReportDecember2019.pdf>.
- Lead Author, Power Plant Research Program, Maryland Department of Natural Resources
 - Electricity in Maryland – Fact Book, 2019
 - Electricity in Maryland – Fact Book, 2016

Expert Testimony

Before the Public Service of South Carolina Docket No. 2023-388-E, *In the matter of Application of Duke Energy Carolinas, LLC for Authority to Adjust and Increase its Electric Rates, Adjustments in Electric Rate Schedules and Tariffs, and Request for an Accounting Order*, April 2024, on behalf of the South Carolina Conservation League, Southern Alliance for Clean Energy, and Vote Solar. Testified regarding impact of rate increase on customer energy burden and the benefits of energy efficiency to offset rate impact. (Ongoing).

Before the Commonwealth of Virginia State Corporation Commission Case No. PUR-2023-000169, *Petition of Appalachian Power Company for approval to continue a rate adjustment clause, the EE-RAC, and for approval of new energy efficiency programs pursuant to § 56-585.1 A 5 c and 56-596.2 of the Code of Virginia*, March 2024, on behalf of the Appalachian Voices. Testified regarding reasonableness of proposed Plan. (Ongoing).

Before the Public Service Commission of the State of Missouri, File No. EO-2023-0136, *In the matter of Union Electric Company d/b/a Ameren Missouri's 4th Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA*, March 2024, on behalf of the National Resources Defense Council. Testified regarding reasonableness of proposed Plan.

Energy Futures Group, Inc

Before the Pennsylvania Public Utilities Commission, Docket No. M-2023-3043230, *Petition of UGI Utilities, Inc. – Electric Division for Approval of its Energy Efficiency and Conservation Plan*, September 2023, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of proposed Plan. (Case settled prior to cross-examination.)

Before the Commonwealth of Kentucky before the Public Service Commission, Case No. 2022-00424, *In the Matter of Electronic Tariff Filing of Kentucky Power Company for Approval of a Special Contract Under Its Economic Development Rider and Demand Response Service Tariffs with Cyber Innovation Group, LLC.*, on behalf of the Mountain Association, Kentuckians for the Commonwealth, Appalachian Citizens' Law Center, Sierra Club, and Kentucky Resources Council. Testified on the merits of providing an economic development discount rate to a proposed crypto mining facility as it relates to ratepayer risk.

Before the Commonwealth of Kentucky before the Public Service Commission, Case No. 2022-00387, *In the Matter of Electronic Tariff Filing of Kentucky Power Company for Approval of a Special Contract with Ebon International, LLC.*, on behalf of the Mountain Association, Kentuckians for the Commonwealth, Appalachian Citizens' Law Center, Sierra Club, and Kentucky Resources Council, Inc. Testified on the merits of providing an economic development discount rate to a proposed crypto mining facility as it relates to ratepayer risk.

Before the Commonwealth of Kentucky before the Public Service Commission, Case No. 2022-00037, *In the Matter of Electronic Tariff Filing of Kentucky Utilities Company for Approval of an Economic Development Rider Special Contract with Bitiki-KY, LLC.*, on behalf of Kentuckians for the Commonwealth, Kentucky Solar Energy Society, Mountain Association, and Kentucky Resources. Testified on the merits of providing an economic development discount rate to a proposed crypto mining facility as it relates to ratepayer risk.

Before the State of Maine Public Utilities Commission, Docket No. 2022-0025 *Versant Power Request for Approval of a Distribution Rate Change – 307*, December 2022, for Maine Office of Consumer Advocate. Testified regarding the reasonableness of the overall revenue increase.

Before the Kansas Corporation Commission, Docket No. 22-EKME-254-TAR *In the Matter of the Application of Evergy Kansas Metro, Inc., Evergy Kansas South, Inc. and Evergy*

Energy Futures Group, Inc

Kansas Central, Inc. for Approval of its Demand-Side Management Portfolio Pursuant to the Kansas Energy Efficiency Investment Act (“KEEIA”), K.S.A. 66-1283, June 2022, for Natural Resources Defense Council. Testified regarding reasonableness of the proposed Plan and its compliance with the KEEIA Act.

Before the Louisiana Public Service Commission, Docket No. U-35877 *Pointe Coupee Electric Membership Corporation Application to Acquire and Install an Automated Metering System and Request for Cost Recovery and Related Relief*, February 2021, for the Louisiana Public Service Commission Staff. Testified regarding the implementation of automated metering infrastructure to replace current meters. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2020-3020818, *Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation Phase IV Plan*, January 2021, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2020-3020830, *Petition of PECO Energy Company for Approval of its Energy Efficiency and Conservation Phase IV Plan*, January 2021, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2020-3020824, *Petition of PPL Electric Utilities for Approval of its Energy Efficiency and Conservation Phase IV Plan*, January 2021, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Louisiana Public Service Commission, Docket No. U-35707 *Southwest Louisiana Electric Membership Corporation Application for Approval to Acquire and Install an Automated Metering System and Request for Cost Recovery and Related Relief*, December 2020, for the Louisiana Public Service Commission Staff. Testified regarding the implementation of automated metering infrastructure to replace current meters. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2020-3020919 *Pennsylvania Public Utility Commission v. Audubon Water Company*, November 2020,

Energy Futures Group, Inc

for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2020-3020256
Pennsylvania Public Utility Commission v. City of Bethlehem – Water Department, November 2020, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Louisiana Public Service Commission, Docket No. U-35456 Concordia Electric Cooperative Inc. *Application for Certification of a Replacement Advanced Metering System and Approval of Related Financing*, November 2020, for the Louisiana Public Service Commission Staff. Testified regarding the implementation of automated metering infrastructure to replace current meters. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2020-3019612
Pennsylvania Public Utility Commission v. Reynolds Disposal Company, October 2020, for the Pennsylvania Office of Consumer Advocate. Participated in mediation regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3010955
Pennsylvania Public Utility Commission v. City of Lancaster – Sewer Fund, October 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008208
Pennsylvania Public Utility Commission v. Wellsboro Electric Company, October 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008209
Pennsylvania Public Utility Commission v. Valley Energy, Inc., October 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008212,
Pennsylvania Public Utility Commission v. Citizens' Electric Company of Lewisburg, PA, October 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3009559, *Pennsylvania Public Utility Commission v. Eaton Sewer & Water Company, Inc. – Wastewater Division*, August 2019, for the Pennsylvania Office of Consumer Advocate. Participate in mediation regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3009567, *Pennsylvania Public Utility Commission v. Eaton Sewer & Water Company, Inc. – Water Division*, August 2019, for the Pennsylvania Office of Consumer Advocate. Participate in mediation regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008947, *Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Water Division*, July 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008948, *Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Wastewater Division*, July 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3006904, *Pennsylvania Public Utility Commission v. The Newtown Artesian Water Company (Supplement No. 136 to Tariff Water – Pa. P.U.C. No. 9)*, March 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2018-3006814, *Pennsylvania Public Utility Commission v. UGI Utilities, Inc – Gas Division (Utility Code 123100, Filed Tariff Gas- Pa. P.U.C. Nos. 7 and 7S)*, January 2019, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of its proposed consolidated natural gas energy efficiency plan. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2018-3004144, *Petition of UGI Utilities, Inc. – Electric Division for Approval of its Energy Efficiency and Conservation Plan*, August 2018, on behalf of the Pennsylvania Office of Consumer

Energy Futures Group, Inc

Advocate. Testified regarding reasonableness of proposed Plan. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2018-3001307, *Pennsylvania Public Utility Commission v. Hidden Valley Utility Services, L.P. – Wastewater (General Rate Increase Filed Pursuant to 66 PS. CS 1308, Including Answers to 52 PA. Code 53.52)*, April 2018, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding the reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2018-3001306, *Pennsylvania Public Utility Commission v. Hidden Valley Utility Services, L.P. – Water (General Rate Increase Filed Pursuant to 66 PS. CS 1308, Including Answers to 52 PA. Code 53.52)*, April 2018, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding the reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. P-2015-2497267, *Petition of Duquesne Light Company for Approval of its Smart Meter Procurement and Installation Plan*, February 2016, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding the inclusion of additional costs related to the Plan's implementation.

Before the Pennsylvania Public Utilities Commission, Docket No. M-2015-2477174, *Petition of UGI Utilities, Inc. – Electric Division for Approval of Phase II of its Energy Efficiency and Conservation Plan*, February 2016, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of proposed Plan. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2015-2515642, *Petition of PPL Electric Utilities for Approval of its Energy Efficiency and Conservation Phase II Plan*, January 2016, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2015-2515375, *Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation Phase II Plan*, January 2016, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Energy Futures Group, Inc

Before the Public Utilities Commission of Rhode Island, Docket No. 4595, *Newport Water Division – Rate Application to Collect Additional Revenues of \$1,304,595 for a Total Cost of Service of \$20,151,440*, December 2015, on behalf of the Division of Public Utilities and Carriers. Testified regarding reasonableness of the overall rate revenue increase.

Before the Maryland Public Service Commission, Case No. 9311, *In the Matter of the Application of Potomac Electric Power Company for an Increase in its Retail Rates For the Distribution of Electric Energy*, April 2013, on behalf of the Maryland Public Service Commission Staff. Testified regarding the inclusion of advanced metering infrastructure meters and energy advisor and engineer positions in rates.

Exhibit SLS-2

Report on Kentucky Power Company's 2022 Integrated Resource Plan

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Prepared for:

**Kentuckians for the Commonwealth, Kentucky Solar Energy Society,
Appalachian Citizens' Law Center, and Mountain Association**

October 6, 2023

Table of Contents

1	Summary and Introduction	5
1.1	Introduction	5
1.2	Kentucky Power’s Preferred Plan.....	5
1.3	Summary of Recommendations.....	6
2	Stakeholder Process.....	7
3	Request for Proposals (“RFPs”).....	10
4	Integrated Resource Plan Modeling	14
4.1	Load Forecast	14
4.2	Distributed Energy Resources (“DERs”)	16
4.2.1	Modeling Supply Side DERs.....	16
4.2.2	Modeling Customer Owned DERs	18
4.3	Supply Side Resource Constraints.....	18
4.4	Supply Side Resource Costs	20
4.4.1	Asymmetry in Modeling.....	20
4.4.2	Battery Storage Book Life	21
4.4.3	Production Tax Credit (“PTC”) and Investment Tax Credit (“ITC”)	22
4.4.4	Energy Community Bonus.....	23
4.4.5	Pipeline and Firm Gas Transportation Costs.....	24
4.4.6	Big Sandy Extension Costs.....	24
4.5	Battery Storage Effective Load Carrying Capability (“ELCC”).....	25
4.6	Long Duration and Multiday Storage Resources	27
4.7	Portfolio Scorecard	28
4.7.1	Metrics	28
4.8	EPA Regulation	31
4.9	Modeling Energy Efficiency in IRPs	33
4.9.1	Modeling Energy Efficiency as a Supply Side Resource	33
4.9.2	Supplemental Energy Efficiency Adjustment (“SEA”)	36

5	Demand Side Management	39
5.1	Benefits of Demand Side Management	40
5.2	Market Potential Study	43
5.3	Recommendations for Demand Side Management	45
5.4	IRA Funding	50
6	Summary of Recommendations.....	51

Table of Figures

Figure 1. Three Pillars for IRP Stakeholder Process	8
Figure 2. Producer Price Indices for Key Inputs Compared to CPI	21
Figure 3. Four Hour Storage ELCC From PJM 2021 ELCC Report	26
Figure 4. Four Hour Storage ELCC From PJM 2022 ELCC Report	26
Figure 5. Demographics Near New Mexico Peaker Plants.....	30
Figure 6. Application of the SEA to the Residential Low/Medium Bundle	37
Figure 7. Levelized Cost of Energy Resources	41
Figure 8. Average annual electricity savings (%), by census region, reproduced from ACEEE	50

Table of Tables

Table 1. Example of Timeline to Release Information	9
Table 2. Actual and Forecasted Commercial Sales	15
Table 3. NIPSCO DER Bundle Characteristics	17
Table 4. Annual and Cumulative Constraints on New Supply Side Resources	19
Table 5. Kentucky Power Scenarios	20
Table 6. PTC Tax Gross Up for 2027 Solar	23
Table 7. Four Hour Battery Storage ELCC Comparison	27
Table 8. Scorecard Metrics.....	28
Table 9. Big Sandy 1 and New CT Capacity Factors in the Preferred Plan	33
Table 10. Average Energy Use Per Square Foot in Kentucky by Housing Type	47

1 Summary and Introduction

1.1 Introduction

Energy Futures Group (“EFG”) was asked by Kentuckians for the Commonwealth, Kentucky Solar Energy Society, Appalachian Citizens’ Law Center, and Mountain Association (“Joint Intervenors”) to perform a review of Kentucky Power Company’s (“Kentucky Power”) 2022 Integrated Resource Plan (“IRP”). The review was performed by Chelsea Hotaling, Consultant, and Stacy Sherwood, Managing Consultant. EFG is a clean energy consulting company that has two primary areas of practice. The first is in the design, implementation, and evaluation of programs and policies to promote investments in efficiency, renewable energy, other distributed resources, and strategic electrification. The second is in integrated resource planning and related analyses. EFG has performed IRP modeling and critically reviewed IRPs in over a dozen states, provinces, and territories.¹ Our work in these jurisdictions includes conducting our own simulations and/or reviewing modeling conducted using a wide variety of electric system modeling platforms including Aurora, which was used by Kentucky Power and its consultant for this IRP.

Our feedback and recommendations are intended to show how Kentucky Power can enhance future IRP processes and filings.

1.2 Kentucky Power’s Preferred Plan

Kentucky Power’s Preferred Plan is a combination of resource builds from the optimized portfolios along with the renewable resources from the CC Portfolio. As Kentucky Power describes its Preferred Plan:

The Preferred Plan pre-selects the 480 MW frame CT build identified in the optimized portfolios along with the renewable and intermittent resource selections from the CC portfolio represented by 700 MW of new wind and 800 MW of new solar, along with 50MW of storage by 2037. The Preferred Plan also includes the extension of the Big Sandy gas unit to 2041. Short-Term Market Purchases (STMP) are utilized with up to 78 MW annually through 2026 and 407 MW in 2028 to fully satisfy near-term adequacy.²

In the IRP, Kentucky Power does note that an All-Source Request for Proposals (“RFP”)³ will be issued and “Depending on the results of the RFP, the Company may pursue different quantities or types of resources from those identified in the Preferred Plan.”⁴ As Kentucky Power outlined in its IRP,

¹ The résumés of Ms. Hotaling and Ms. Sherwood are attached to this report as Attachments A and B.

² Kentucky Power 2022 Integrated Resource Plan, Volume A – Public Version, Case No. 2023-00092, at 173 (Mar. 20, 2023) (“KPCo 2022 IRP-Vol. A”).

³ Kentucky Power issued battery storage, wind, solar, and thermal RFPs on September 22, 2023. See Kentucky Power Co., *KPCO 2023 All Source RFP*, www.kentuckypower.com/rfp (last accessed Oct. 5, 2023).

⁴ KPCo 2022 IRP-Vol. A at 175 n.48.

through adjustments to the load forecast, and Itron, the vendor of AEP's load forecast model, has offered several ways to do this including adding back the historical impact of energy efficiency, incorporating a DSM variable in the SAE model, and using trends.¹⁰¹

However, even if the bundles modeled in Aurora did not account for free riders, the SAE approach would still be problematic for the following reasons:

1. The SAE approach assumes that savings decline linearly to zero over the life of the measure. For instance, savings from a hot water heater would decline to 0 over the life of the heater. However, in this example, the customer must either be a free rider or not. The savings will persist for the entirety of the water heater life, or they are 0 for the entirety of the life of the water heater—there is no in between. And even averaging the free riders with non-free riders, i.e., averaging the zero and ones, cannot, mathematically, lead to a different average over the life of a measure.
2. Since the SAE factors decline to almost zero over the assumed life of the efficiency measure bundles, the impact on lifetime savings is much more than the NTG factor.
3. Free ridership is largely a function of program design and should vary from one program to another. It is likely 0% for low-income customers, relatively low for many HVAC and appliance rebates, and higher for residential lighting. Free ridership would likely change if the program offering a rebate of \$50 on a \$500 measure was increased to a \$400 rebate on that \$500 measure, yet the SAE does not take this variability into account.

We recommend that Kentucky Power discontinue the application of the SEA to energy efficiency bundles, as AEP's affiliate Indiana Michigan Power Company has committed to do so in the state of Indiana. Instead, we recommend that Kentucky Power make bundles available for selection within the model and only make adjustments to account for free riders through the application of the NTG to convert gross energy savings to net savings.

5 Demand Side Management

Kentucky Power's Preferred Plan includes demand side resources, with an additional 48 MW of such resource between years 2023 and 2037 to offset 52 MW of supply side resources during the same time frame. The projected demand side resources are based upon a benchmarking study,¹⁰² as the IRP was filed prior to the completion of the market potential study ("MPS"), both of which were conducted by

¹⁰¹ Stuart McMenemy, *Incorporating DSM into the Load Forecast*, Itron, <https://www.itron.com/-/media/feature/products/documents/white-paper/incorporating-dsm-into-the-load-forecast.pdf>

¹⁰² The benchmarking study was based on recently completed MPS for utilities in Indiana and Kentucky, as well as a review of EIA information.

GDS Associates.¹⁰³ Currently, the Company's demand side management ("DSM") activity is limited to a weatherization program for income-qualified ratepayers, as the Commission directed Kentucky Power to suspend DSM activities until the service territory either experiences load growth or has a capacity deficiency. Kentucky Power is currently experiencing the latter, particularly with Kentucky Power planning to divest from the Mitchell units in 2028.¹⁰⁴

5.1 Benefits of Demand Side Management

DSM, delivered through both EE and demand response ("DR") programs, provides a wide variety of benefits, for both participants and non-participants. These benefits include reduction in infrastructure and operational costs through cost-effective investments in efficiency, as well as reduced energy usage costs for homes and businesses. The latter is considered a direct customer benefit for participants, as it can reduce monthly energy bills through the reduction of energy or shifting energy usage form periods with high demand. Beyond these direct benefits, cost-effective DSM programs can increase economic development within the service territory, reduce capacity requirements, reduce exposure to fuel price volatility, and increase reliability and safety for ratepayers.

As noted by the American Council for an Energy-Efficiency Economy ("ACEEE"), "Energy efficiency today is an important utility system resource, typically, the lowest-cost system resource compared to supply side investments."¹⁰⁵ As identified in Figure 7, EE and DR efforts can be implemented cost-effectively and at a lower cost than meeting ratepayers' energy needs through investments in new generation and transmission and distribution assets, essentially deferring or eliminating some infrastructure investments. The reduction in infrastructure investments benefits both participants in DSM programs, as well as non-participants as these cost reductions are shared across all ratepayers.

¹⁰³ The Kentucky Power specific MPS was filed in Case No. 2022-00392 on August 11, 2023.

¹⁰⁴ See KPCo 2022 IRP-Vol. A at 55 (Figure 12 showing Kentucky Power "Going-In" Capacity Position throughout the Planning Period). The Company has entered into bilateral contracts for the next two PJM delivery years to make up its capacity shortfall. See Response of Kentucky Power Company to Attorney General and Kentucky Industrial Utility Customers' Supplemental Request for Information, Case No. 2023-00092, Question 2.7 (Sept. 8, 2023) ("KPCo Response to AG-KIUC Q").

¹⁰⁵ ACEEE, *Energy Efficiency as a Resource*, <https://www.aceee.org/topic/ee-as-a-utility-resource#:~:text=Energy%20efficiency%20today%20is%20an,compared%20to%20supply%20side%20investments> (last visited Sept. 29, 2023).

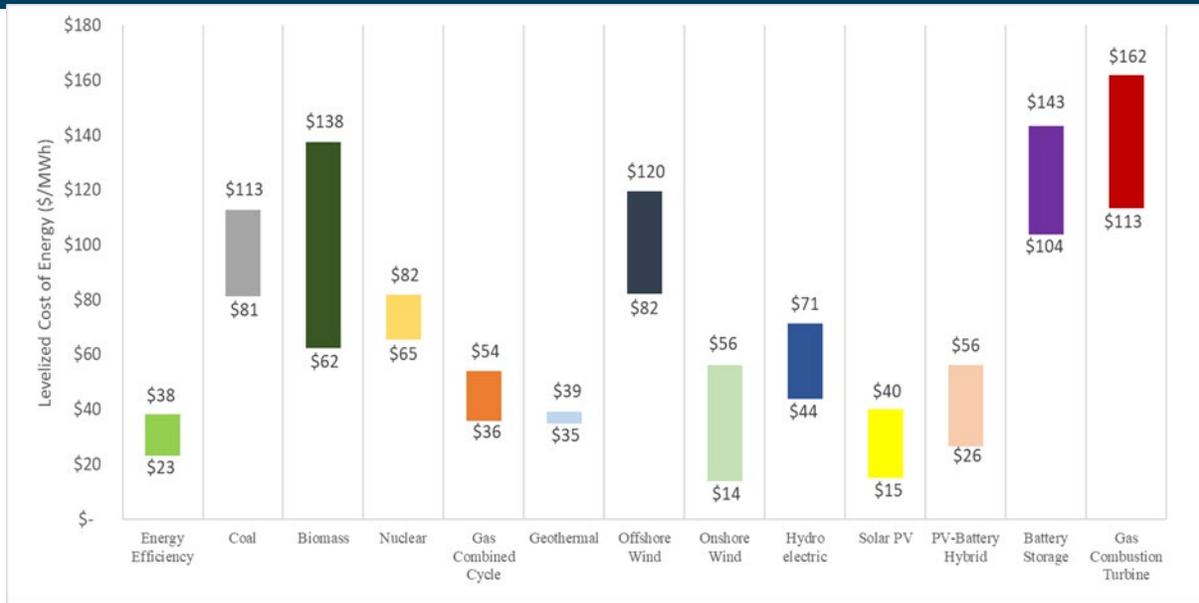


Figure 7. Levelized Cost of Energy Resources¹⁰⁶

Direct participation in DSM programs, both EE and DR, may result in benefits such as reduced monthly bills, energy usage, increased comfort, health benefits, and increased reliability through improved building shell improvements.¹⁰⁷ EE programs consisting of building weatherization and more efficient measures such as appliances and heating, ventilation, and air conditioning (“HVAC”) equipment, may lower energy and capacity needs. EE investment in income qualified homes is an important part of any DSM portfolio as it may not only achieve the benefits listed above, but also reduce energy burden.¹⁰⁸ In addition to capacity savings through EE programs, DR programs can lower capacity during periods of high demand in specific areas or throughout the service territory by shifting equipment operation times

¹⁰⁶ Levelized cost of energy (“LCOE”) for energy efficiency from ACEEE Policy Brief, *The Cost of Saving Electricity for the Largest U.S. Utilities: Ratepayer-Funded Efficiency Programs in 2018* (June 2021), https://www.aceee.org/sites/default/files/pdfs/cost_of_saving_electricity_final_6-22-21.pdf. LCOE for generation is from the U.S. Energy Information Administration Annual Energy Outlook 2023, https://www.eia.gov/outlooks/aeo/electricity_generation/ (Last accessed October 3, 2023). The LCOE for energy efficiency was in 2018 dollars while the LCOE for generation was provided in 2022 dollars. To allow for benchmarking, the 2018 dollars were inflated to 2022 dollars using the Core Consumer Price Index.

¹⁰⁷ While it is typical to experience reduced energy usage and cost with investments in EE, if a home is going through the process of electrification, then there is potential for increase electric usage; however, these costs can be offset by lower or eliminated delivered fuel bills and/or better bill management.

¹⁰⁸ Ariel Dreobl et al., *How High are Household Energy Burdens?: An Assessment of National and Metropolitan Energy Burden across the United States*, American Council for an Energy Efficient Economy, at iii (Sept. 2020), <https://www.aceee.org/sites/default/files/pdfs/u2006.pdf> (“Energy burden is the cost of household energy use compared to household income. Households with energy burden of 6% are considered high and those with energy burdens above 10% are considered severe.”).

to periods of lower demand. Shifting demand can lower overall capacity requirements and be achieved either through devices which cycle water heaters and HVAC equipment or provide rates which discourage demand during specific hours.

Economic development is another benefit of DSM with an increase in direct jobs, such as those to implement efficiency programs and measures, and indirectly through increased spending from lower energy bills, which create economic benefits and, potentially, additional jobs. Based on recent filings by Kentucky Power, there is a strong desire in the region to incentivize investment in economic development and jobs. Implementing EE and DR programs within the service territory would also be supportive of Governor Andy Beshear's energy strategy, KYE3, which incorporates the environment and economic development.¹⁰⁹

Energy efficiency savings avoid fuel costs, like solar and wind generation, and can be used as a tool to reduce exposure to fuel price volatility. For example, a 2018 study from the American Council for an Energy Efficient Economy explained that in addition to often being the lowest-cost resource available, energy efficiency:

*provides utilities and retail electric providers an additional strategy to reduce exposure to price volatility. Efficiency can serve as a type of long-term supply contract that provides energy resources at a fixed price. . . . Resource planning should consider this value of reduced risk when making long-term decisions on how to meet anticipated electricity demand.*¹¹⁰

As noted here, there are significant and quantifiable benefits that result from investment in DSM, which is also the lowest-cost resource when compared to supply side resources. These benefits are not only recognized by direct program participants through increased resiliency of their homes and businesses, but also for non-participants through avoided costs, workforce development, and increased investment in the community. These benefits, particularly during a period of capacity shortage, are best recognized through comprehensive and cost-effective DSM efforts which include both EE and DR programs.

¹⁰⁹ E³ Foundation, *KYE³: Designs for a Resilient Economy* (2021), https://eec.ky.gov/Energy/Documents/KYE3_Final_10.18.2021.pdf.

¹¹⁰ Brendon Baatz et al., *Estimating the Value of Energy Efficiency to Reduce Wholesale Energy Price Volatility*, ACEEE, at iii (April 2018), <https://www.aceee.org/research-report/u1803>; see also David Hoppock and Dalia Patino Echeverri, *Using Energy Efficiency to Hedge Against Natural Gas Price Uncertainty* (Jan. 2013), https://nicholasinstitute.duke.edu/sites/default/files/publications/ni_wp_13-02.pdf.

5.2 Market Potential Study

The MPS, released late in the process of the IRP and therefore not available for discovery purposes, leaves several questions about how it may validate the level of efficiency that should be modeled in the IRP. These questions include what are the assumptions that the achievable potential savings is based upon, the direction provided by Kentucky Power for consideration in the study, such as the exclusion of DR programs, and whether stakeholder input could have resulted in more robust results for the achievable potential.

There are a total of five programs proposed by the MPS that will be implemented over the three-year portfolio period for less than \$10 million. Below is a highlight of each of the proposed programs, as well as a high-level comment on the program and proposed recommendations for consideration by the Company as it develops its EE portfolio. The programs include:

- Targeted Energy Efficiency Program – This is a continuation of the current income eligible program currently funded by Kentucky Power that provide supplemental funding to the state’s weatherization assistance program (“WAP”) for HVAC and weatherization technologies.
 - Positive: The program intends to double its funding from current levels over the three-year plan period. Although the program is not cost-effective, most income eligible programs are not cost-effective unless non-energy benefits are included as part of the cost-effectiveness screening.
 - Concern: There is an influx of federal funding for WAP, which may make it difficult for the community action agencies to utilize the Kentucky Power funding. Kentucky Power should consider implementing its own complimentary income-eligible program to have control over the level of savings anticipated from the program, expand the effort of weatherization in the area, and can still cost share with WAP as a way to leverage the funding opportunities. If implemented by Kentucky Power instead of the WAP agencies, an income eligible program could also include specific funding allocations for manufactured homes and multifamily buildings.
- Home Energy Improvement Program (“HEIP”) – this program will provide energy audits and rebates for weatherization and HVAC equipment.
 - Positive: The program will not only offer financial incentives but will also include funding for energy audits to help participants understand how to improve the efficiency and resiliency of their home.
 - Concern: The energy audits will not be implemented until year 2 or 3, which may delay measures such as attic insulation, duct insulation, and air sealing to make the home tighter prior to the sizing of new HVAC equipment. The audits should be available as the program is initially rolled out. It is also unclear if

renters will be able to take advantage of this program. That should be clarified and a process to receive approval from landlords should be established.

- Marketplace Program – this effort will be provided via an online platform that will allow customers to purchase items such as smart thermostats, air purifiers, clothes washers, and smart plugs.
 - Positive: This program offers products at various price points, which means that all residential customers that pay into the system will have the ability to participate. Kentucky Power plans to leverage operating this program along with other AEP subsidiaries to reduce the cost of the program.
 - Concern: Despite this program already operating in other AEP subsidiaries, the program will not begin operation until the second year of the portfolio. It's unclear why this program could not be rolled out in the first year of the three-year plan term.
- Commercial Prescriptive Program – The program will offer commercial and industrial customers incentives for measures such as lighting fixtures and controls, thermostats, HVAC equipment, and kitchen equipment.
 - Positive: The program will be able to deploy lighting fixtures and replacement prior to the phase out of lighting in commercial EE programs.
 - Concern: The program lacks any energy audit option which will require businesses to be aware of the program and what their businesses may need, even though they are likely not EE experts. There is no small business aspect to the program, which will likely serve as a financial barrier to those customers. Additionally, there are no manufacturing efficiency measures such as variable frequency drives and retro commissioning.
- Commercial Custom Program – existing and new facilities can receive incentives for measures not included in the Commercial Prescriptive Program and will require verified energy savings for each project.
 - Positive: Customers can receive incentives for measures such as HVAC, refrigeration, and compressed air.
 - Concern: the program also does not appear to include an energy audit, like the Commercial Prescriptive Program, and is not expected to launch until the third year of the program plan. There are plenty of program models available throughout the US to have this program begin sooner in the program plan year, which could be done with the assistance of a third-party implementor.

The expansion of DSM programs in the Kentucky Power service territory is a positive development for ratepayers and will deliver benefits to both participants and non-participants. However, the limitations of potential studies have been well-documented by organizations such as ACEEE, the Regulatory Assistance Project, Lawrence-Berkeley National Laboratory, and others who have studied the correlation

between potential study estimates and actual savings achievements.¹¹¹ ACEEE, for example, reviewed “45 publicly available studies published since 2009” with the intent to “better understand the nuts and bolts of these studies and how their various methodological approaches and assumptions influence energy efficiency potential estimates.”¹¹² The report concludes, among other things, that

*given the inaccuracy of models and the generally conservative approach of these studies, there is likely a great deal of additional cost-effective potential available beyond what is identified. . . . Moreover, given the fact that most studies base their customer-participation models on economics, even short-term forecasts of market dynamics are murky. This is because studies tend to downplay the impact of program design elements such as marketing and education, as well as the non-energy justifications for investing in energy efficiency.*¹¹³

As discussed in the next section, Kentucky Power can likely implement EE programs which achieve energy and demand savings in excess of what was identified as achievable in the MPS. Kentucky Power should consider expansion of the program offerings to ensure an equitable delivery of the program and that those that pay into the DSM programs are able to participate. This can be achieved by target marketing to environmental justice and disadvantaged communities and offering programs such as small business programs and financing opportunities for both residential and commercial customers. Additionally, while Kentucky Power is in the planning phase of its DSM portfolio, it should consider the inclusion of DR programs and the benefits of a third-party implementer to shorten the roll out time outlined in the MPS.

5.3 Recommendations for Demand Side Management

The DSM offered by Kentucky Power should be cost-effective, at a portfolio level, and offer program and measure opportunities which will allow all those who pay into the program to be able to participate.

¹¹¹ See, e.g., David B. Goldstein, *Extreme Efficiency: How Far Can We Go If We Really Need to?*, ACEEE Summer Study on Energy Efficiency in Buildings, 10-44 –10-56 (2008), https://www.aceee.org/files/proceedings/2008/data/papers/10_435.pdf; Philip Mosenthal, *Do Potential Studies Accurately Forecast What is Possible in the Future? Are We Mislabeled and Misusing Them?: Presentation for ACEEE Energy Efficiency as a Resource Conference*, Optimal Energy, Inc. (Sept. 21, 2015), https://www.aceee.org/sites/default/files/pdf/conferences/eer/2015/Philip_Mosenthal_Session2D_EER_15_9.21.15.pdf; Chris Kramer & Glenn Reed, *Ten Pitfalls of Potential Studies*, Regulatory Assistance Project (2012), https://www.raonline.org/wp-content/uploads/2016/05/energyfutures-kramerreed-tenpitfalls_esdraft2-2012-oct-24.pdf.

¹¹² Max Neubauer, *Cracking the TEAPOT: Technical, Economic, and Achievable Energy Efficiency Potential Studies*, Report U1407, Am. Council for an Energy Efficient Econ., at v (Aug. 2014) (“Neubauer Report”).

¹¹³ *Id.* at 39.

Kentucky Power should consider offering a suite of programs that has an equity lens to focus on environmental justice and disadvantaged communities, as well as provide measures for different housing and business types, such as manufactured homes and small businesses, respectively. The savings from DSM should be focused on comprehensive and long-lived savings, rather than short-lived savings, such as those achieved through behavioral reports.

There are certain program and measure offerings that should be considered as part of Kentucky Power's portfolio, such as housing type and heating type, to ensure that the programs address efficiency needs. On the residential side, Kentucky Power's EE programs should offer programs that address manufactured homes and provide incentives to replace inefficient electric resistance heating. With commercial programs, like the income-eligible program carve-out, there should be a carve-out for small businesses to ensure that they can access the programs despite potential financial barriers.

According to the U.S. Census Bureau, manufactured housing makes up approximately 11 percent of housing in Kentucky, or 220,581 homes.¹¹⁴ On an average per square foot basis, manufactured homes have the highest energy consumption compared to any other housing type, paying more than double the energy cost.¹¹⁵ As noted in Table 10 below, the increased energy usage in a manufactured home in Kentucky Power's service territory is higher than single or multifamily properties. The energy burden is significant as residents of manufactured housing are more likely to be on fixed-income or qualify as low-income. Furthermore, existing manufactured housing is likely to be less efficient than single- and multifamily homes, as nationwide standards for multifamily housing first went into effect in 1976, were updated in 1994, and then did not undergo any significant changes until 2016.¹¹⁶ In 2022, the Department of Energy adopted the latest International Energy Conservation Code ("IECC") standards, IECC 2021, for manufactured homes which should lower energy bills compared to existing models due to increased insulation and air sealing requirements; however, this code adoption only impacts new units.¹¹⁷ This energy burden is experienced by Kentucky Power's customers, as shown in the MPS, where manufactured homes account for 31 percent of the residential energy consumption. The MPS

¹¹⁴ *Comparative Housing Characteristics [for Kentucky]* (2022), U.S. Census Bureau, [https://data.census.gov/table?q=housing+types+in+kentucky&t=Heating+and+Air+Conditioning+\(HVAC\)+Physical+Characteristics&g=050XX00US21019&y=2022](https://data.census.gov/table?q=housing+types+in+kentucky&t=Heating+and+Air+Conditioning+(HVAC)+Physical+Characteristics&g=050XX00US21019&y=2022)

¹¹⁵ Forest Bradley-Wright, *Energy Efficiency in the Southeast Fifth Annual Report*, Southern Alliance for Clean Energy (Mar. 2023), <https://cleanenergy.org/wp-content/uploads/Energy-Efficiency-in-the-Southeast-Fifth-Annual-Report.pdf>; Lowell Ungar, *Mobile Homes Move Toward Efficiency*, ACEEE (Aug. 3, 2016), <https://www.aceee.org/blog/2016/08/mobile-homes-move-toward-efficiency>

¹¹⁶ Forest Bradley-Wright, *New Traction on Efficiency Programs for Manufactured Homes*, Southern Alliance for Clean Energy (April 2023), <https://www.cleanenergy.org/blog/new-traction-on-efficiency-programs-for-manufactured-homes/> (last visited October 3, 2023).

¹¹⁷ *DOE Updates Mobile Home Efficiency Standards to lower Household Energy Bills*, Department of Energy, <https://www.energy.gov/articles/doe-updates-mobile-home-efficiency-standards-lower-household-energy-bills>.

identified that 15% of the achievable potential for Kentucky Power will come from manufactured homes.¹¹⁸ Yet, the MPS did not include any specifics regarding measures to address this type of housing.

Table 10. Average Energy Use Per Square Foot in Kentucky by Housing Type¹¹⁹

PREMISE TYPE	AVG. ANNUAL ENERGY USE (KWH)	AVERAGE PREMISE SIZE (SQ. FT)	AVERAGE ENERGY USE PER SQUARE FOOT (KWH/SQ. FT)
SINGLE FAMILY	15,834	1,433	11.05
MANUFACTURED HOMES	14,821	1,001	14.81
MULTIFAMILY	8,582	1,957	4.39
AVERAGE	14,879	1,340	11.10

While there are some measures, such as insulation, air sealing, and heat pumps, that can be installed in manufactured housing, having a dedicated program promotes equitable EE programs and can address issues specific to manufactured housing, such as weatherization techniques for air sealing due to the design and insulated skirting. Development of a manufactured housing efficiency program would be supportive of the Manufactured Housing and Energy Efficiency Affordability Initiative, which the Kentucky Office of Energy Policy has committed to, that is designed to develop best practices for addressing various parts of manufactured housing, high heating and cooling costs and improving the availability of affordable and energy-efficiency housing options.¹²⁰ There are several examples of dedicated manufactured home efficiency programs that Kentucky Power can reference as it develops its own program design.¹²¹

For homes that are heated with resistant heating, it typically costs more to remove the inefficient heating system and replace it with either a central or mini-split heat pumps due to the costs, lack of duct

¹¹⁸ MPS at 31.

¹¹⁹ MPS at 47. Average Annual Energy Use and Average Premise Size are recreated, in part, from Table 6-1 Summary Statistics by Residential Premise Type. The premise level square footage in the MPS was derived from individual residential accounts. Therefore, the assumption is that the multifamily premise square footage is the average per multifamily unit and not average per multifamily building.

¹²⁰ *Nat'l Ass'n Energy Officials, Manufactured Housing*, <https://www.naseo.org/issues/buildings/manufactured> (last visited Oct. 5, 2023).

¹²¹ Examples of EE manufactured homes can be found here: Forest Bradley-Wright, *New Traction on Efficiency Programs for Manufactured Homes*, Southern Alliance for Clean Energy (Apr. 19, 2023), <https://www.cleanenergy.org/blog/new-traction-on-efficiency-programs-for-manufactured-homes/>; Jonathan Susser, *Keeping Manufactured Housing Affordable Through Energy Efficiency*, Advanced Energy (June 11, 2018), <https://www.advancedenergy.org/2018/06/11/keeping-manufactured-housing-affordable-through-energy-efficiency/>.

work, and/or upgrades for electrical panels. Therefore, transitioning to more efficient equipment, like a heat pump, will require a higher investment than a home that already has a central furnace. Therefore, Kentucky Power should consider offering a wide variety of incentive levels, based upon existing heating and cooling conditions, to allow for more inclusive programs related to HVAC.

On the commercial side, there should be a focus to ensure that small business customers, including mom and pop shops, are able to take advantage of EE opportunities related to weatherization and building resiliency. Small business customers typically require higher financial incentives and short-term, no cost financing to adopt EE measures, as well as more assistance to complete the process, such as an energy assessment. The only mention of small businesses in the MPS is related to the Marketplace program, where customers can purchase items such as thermostats, smart plug strips, and, potentially, small appliances.¹²² Beyond limited program offerings specific for small-business, there are no financing options discussed throughout the MPS; however, it is common for small business efficiency programs to be complemented with financing options, designed to have the remaining project cost paid back over a short-term period during which the benefits/savings matches or exceeds the payback term. There are voluminous examples of small business EE programs throughout the United States.¹²³

On both the residential and business side, there may be a concern about the rural nature of the Kentucky Power service territory which can provide geographic barriers, impact workforce availability, and result in higher upfront costs to provide services. However, there are offerings throughout the U.S., including in Maine, Alaska, and Vermont, that identify successful implementation of EE programs in rural areas.¹²⁴ AEP, the parent company of Kentucky Power, has successfully implemented EE programs in

¹²² MPS at 8.

¹²³ Some examples of programs include: AEP Energy Small Business, <https://www.aepenergy.com/small-business/>; Appalachian Power Small Business Direct Install Program, <https://takechargeva.com/programs/for-your-business/small-business-direct-install-program>; Baltimore Gas and Electric Small Business Energy Solutions, <https://bgesmartenergy.com/business/business-programs/small-business-energy-solutions#:~:text=Eligible%20businesses%20located%20in%20BGE's,Learn%20more>; Energize Connecticut Small Business Energy Advantage Program; Southwestern Electric Power Company Small Business Pathway, <https://swepcosavings.com/#/small-business>; Duke Energy Progress Small Business Energy Saver, <https://www.duke-energy.com/business/products/small-business-energy-saver/learn-more?jur=NC02>; Consumers Energy Small Business Energy Efficiency, <https://www.consumersenergy.com/business/energy-efficiency/small-business-solutions>.

¹²⁴ A Department of Energy-funded two-year project, known as Bridging the Rural Efficiency Gap Project, identified effective approaches to address residential EE in rural areas of Alaska, Maine, New Hampshire, and Vermont. Kentucky Power should review how the options could be successfully adopted within its service territory. Brooks Winner et al., *Bridging the Rural Efficiency Gap: Expanding Access to Energy Efficiency Upgrades in Remote and High Energy Cost Communities*, Island Institute (2018), <https://www.energy.gov/scep/slsc/articles/bridging-rural-efficiency-gap-expanding-access-energy->

nearby states, such as Southwestern Electric Power Company’s programs in Arkansas,¹²⁵ Indiana Michigan Power’s programs in Indiana and Michigan,¹²⁶ Appalachian Power’s programs in West Virginia and Virginia.¹²⁷ To drive participation and workforce development in rural areas, like the Kentucky Power service territory, the Company should consider working with local partners and the community to design and implement the EE programs, as well as work with the state to develop workforce training, which could potentially leverage funds from other utilities in the area, as well as funding from the Inflation Reduction Act (“IRA”).¹²⁸ In addition, when evaluating DSM implementation contractors, the Company should prioritize contractors with demonstrated experience implementing EE programs in rural areas and developing a workforce and trade allies in an area that has not previously had EE programs.

While there are specific attributes to the Kentucky Power service territory that may appear as barriers to implementing DSM programs, such as a rural service territory, none of those should be viewed as a limitation on the potential energy and capacity savings that can be achieved. While MPS’s are performed for individual utilities, ACEEE found, through the analysis of 45 potential studies, that “the relationship between savings and study time period, savings and census region (to assess possible geographical differences), savings and participation rates, and savings and avoided costs . . . [that] [i]t does not appear that savings vary by geography: there was equal representation across the country for a given level of savings.”¹²⁹ Figure 8 below shows that regardless of the potential study’s region, with each region represented in a different color, the savings achieved by a region varies significantly instead of being clustered together. Therefore, the Company’s geographic characteristics should not dictate the level of savings that can be achieved, rather it should influence the program design to ensure successful delivery.

[efficiency-updates-remote#:~:text=The%20“rural%20efficiency%20gap”%20describes,areas%20with%20lower%20energy%20prices.](#)

¹²⁵ Sw. Elec. Power Co., *Money Saving Programs*,

<https://www.swepco.com/savings/home/money/incentives/> (last visited Sept. 29, 2023).

¹²⁶ Indiana Michigan Power Co., *Electric Ideas: Rebates & Products*, <https://electricideas.com/at-home/rebates-products/> (last visited Sept. 29, 2023).

¹²⁷ Appalachian Power, *Appalachian Power Residential Programs*,

<https://www.appalachianpower.com/savings/home/> (last visited Sept. 29, 2023).

¹²⁸ Mary Shoemaker et al., *Reaching Rural Communities with Energy Efficiency Programs*, ACEEE (Sept. 2018), <https://www.aceee.org/sites/default/files/publications/researchreports/u1807.pdf>.

¹²⁹ Neubauer Report at v, *supra* n.73.

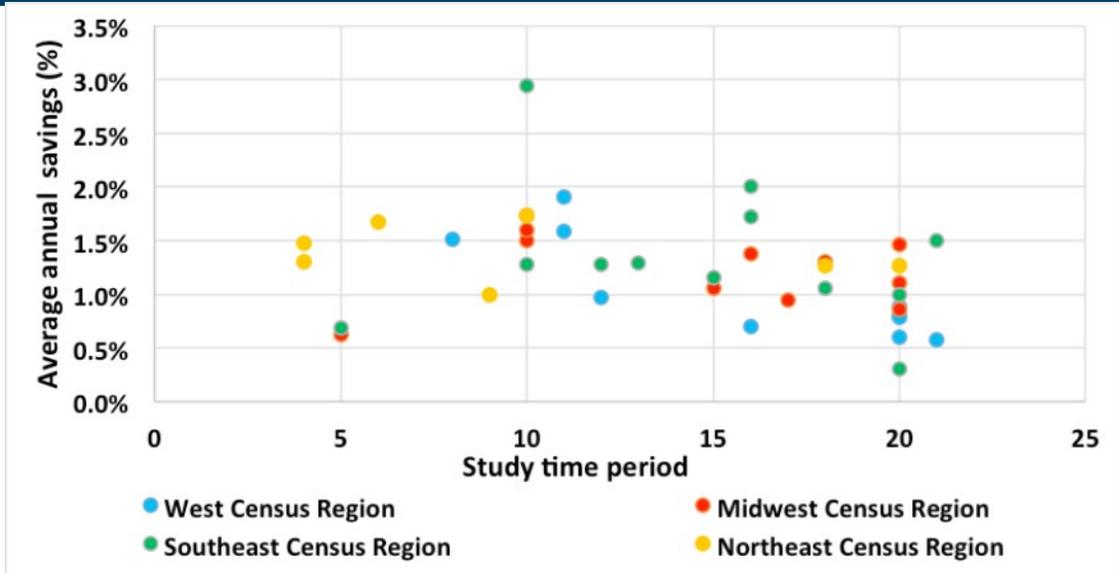


Figure 8. Average annual electricity savings (%), by census region, reproduced from ACEEE¹³⁰

5.4 IRA Funding

Through the IRA the state of Kentucky will receive \$67.3 million for the Home Energy Performance-based, Whole House rebates (“HOMES”) and \$66.9 million for the High Efficiency Electric Home Rebate (“HEERA”), which are programs that rebate efficiency electrification and weatherization, with increased rebates for low- and moderate-income households. While these funds are available through the year 2031, it is likely that the funds will be utilized before that time if successfully implemented. While \$134 million seems like a lot of funding, 20 percent of these funds are allowed to be allocated for administration of the rebate programs, which lowers the amount of funds to approximately \$107 million.¹³¹ This funding will be available to qualified homes throughout the entire state of Kentucky and will likely be utilized in locations that have available workforce that can provide energy audits and perform weatherization and HVAC work. Therefore, having EE programs in place from the utility will help ensure that Kentuckians in the Kentucky Power service territory will be able to take advantage of the funds.

The IRA funding from HOMES and HEERA will likely be best utilized if leveraged with other efficiency rebates and incentives and in an area with an established weatherization and HVAC workforce. While it

¹³⁰ *Id.* at 30, Fig. 4: Average annual electricity savings (%), by census region.

¹³¹ Without existing infrastructure in place, such as utility EE programs, the administration of the funds will likely require use of the full 20 percent of the funds, if not more from additional funding sources given the program requirements.

will likely take time for Kentucky Power to implement and ramp up programs, the Company could have its utility programs up and running well before the conclusion of the funding available. It will also provide opportunities for Kentucky Power to leverage program opportunities, such as direct load control switches on heat pumps, which can help to shift demand as homes electrify.

Rebates are not the only form of funding coming from IRA that will support EE. In addition to the rebates, there are IRA initiatives that will offset the costs for solar and EE upgrades for single and multifamily properties, such as those from the Greenhouse Gas Reduction Fund Solar for All initiative and the Green and Resilient Retrofit Program. Furthermore, complimentary efforts on financing are being offered through green bank efforts. Kentucky Power should explore how these initiatives, plus partnering with the Green Bank of Kentucky, can provide ratepayers with options to implement EE within their homes and businesses.

IRA funding should be seen as complementary to any DSM efforts implemented by Kentucky Power, rather than as a replacement for utility investment in energy savings. EE and DR programs take time to ramp up, likely at a faster pace than projected by Kentucky Power in its benchmarking and MPS report. The infrastructure used to implement Kentucky Power's DSM programs can be used to support the utilization of the IRA funds, which are likely not going to be widely available until 2025. The launch of DSM programs in the Kentucky Power Service territory can benefit from the buzz around the IRA funding and discussions of efficiency to help promote their programs outside of any direct marketing performed by the Company. Outside of IRA funding, Kentucky Power is facing a capacity shortage, which can be offset by investment in EE. Therefore, it is important that Kentucky Power begin its EE sooner rather than later.

6 Summary of Recommendations

Based on our review of the Companies' IRP and its responses to our discovery, we offer the following recommendations to Commission Staff and Kentucky Power:

Stakeholder Process

1. Provide stakeholders with a schedule of when modeling and supporting data will be shared;
2. Build time into the schedule to allow stakeholders to submit feedback on information shared;
3. Schedule follow up meetings as necessary to discuss feedback that results in points of disagreement; and
4. Assist with negotiating a discounted, project-based licensing fee that permits interested intervenors the ability to perform their own modeling runs in the same software package(s).

Inputs and Modeling

1. Update modeling to remove the Ebon load from the load forecast;
2. Include modeling runs that relax annual build limits on renewable and battery storage resources;
3. Apply cost increases to all resources, regardless of technology type in the modeled scenarios;
4. Model battery storage resources with at least a 15-year book life;
5. Ensure that the full tax gross up was applied to the Production Tax Credit (“PTC”) and the Investment Tax Credit (“ITC”) modeled for renewables and battery storage resources in Aurora;
6. Include the potential for renewables and battery storage resources to qualify for the Energy Community bonus adder;
7. Update information around the pipeline and firm gas transportation costs for any new natural gas combustion turbine (“NGCT”) capacity;
8. Model 8 or 10-hour lithium-ion battery storage and multiday storage resources as candidate resources;
9. Evaluate higher levels for the Effective Load Carrying Capability (“ELCC”) for four-hour battery storage resources to align with projections from PJM;
10. Include modifications to the Portfolio Scorecard metrics;
11. Evaluate the proposed greenhouse gas regulation from the Environmental Protection Agency (“EPA”);
12. Implement adjustments to modeling energy efficiency as a supply side resource; and
13. Remove the application of the Supplemental Efficiency Adjustment (“SEA”) to energy efficiency bundles modeled as a supply side resource.

With respect to Kentucky Power’s DSM planning process, we recommend that programs specifically tailored to customers who rely on electric resistance heating, live in manufactured housing, or run small businesses—all segments with great need and opportunity for energy savings. We encourage Kentucky Power to consider the workforce development benefits of DSM program investments, and to develop a portfolio of programs that leverage and complement federal efficiency incentives.

Exhibit SLS-3

United Illuminating Electric PMI (2024)

2024 Management Incentive Performance Indicators and Incentive Matrix

United Illuminating and the EEB recognize that having clear indicators and metrics of performance are helpful in delivering quality programs to Connecticut consumers. The following is a table of performance and incentive metrics developed by the Companies with input from the EEB, the EEB consultants and DEEP. These performance and incentive metrics apply to the programs delineated in the 2022-2024 Plan. The projected United Illuminating Performance Incentive is **\$1,964,321** and is based on achieving 100% of all performance targets and earning an incentive of 5.0% of the total EE program budget of **\$39,286,420** as shown on Table A (exclusive of EEB costs, Evaluation Consultant costs, Management incentives, Audit costs, and ARPA revenue). The actual earned amount will be calculated on a sliding scale based on the percent of goal achieved and the actual total expenditures, based on the following performance range:

Performance Incentive Illustration

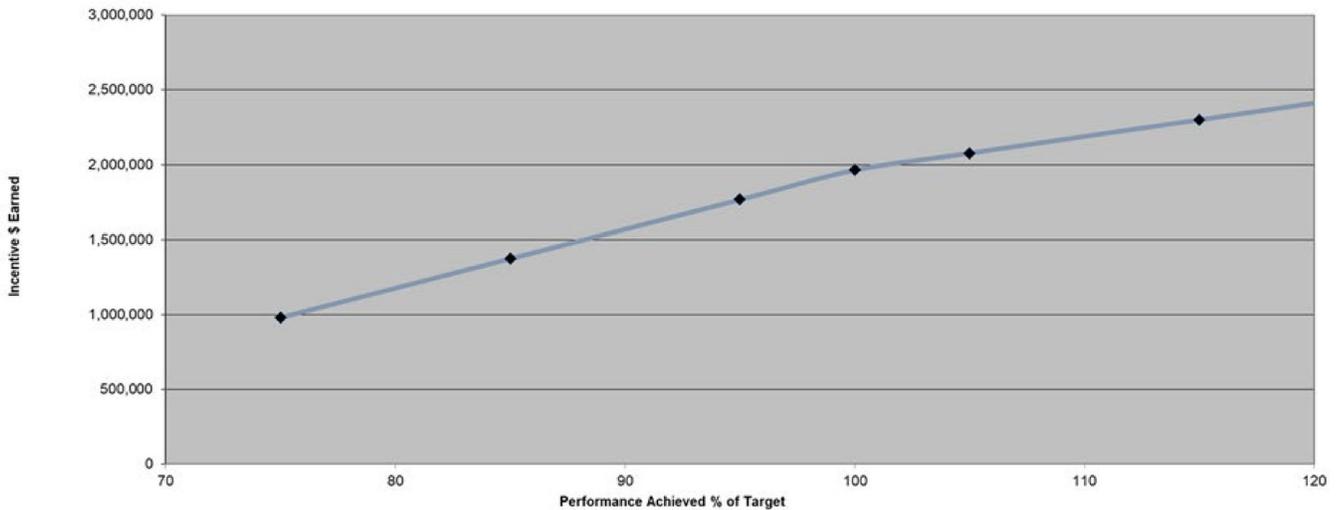
“Performance % Minimum”	Pre-tax %	Pre-tax Incentive
75	2.50%	\$982,161
85	3.50%	\$1,375,025
95	4.50%	\$1,767,889
100	5.00%	\$1,964,321
105	5.29%	\$2,078,252
115	5.86%	\$2,302,184
125	6.43%	\$2,526,117
135	7.00%	\$2,750,050

Maximum

Incentive Basis Budget \$39,286,420

"Goals will be prorated based on actual over/under spend of budget. "

Incentive \$ Earned vs Performance Achieved



United Illuminating Electric PMI (2024) (continued)

Sector		Performance Indicators						Incentive Metrics			
Residential	Program Name	LT-kWh	kW	LT Oil Gal	LT Prop Gal	LT Gas CCF Savings from Electricification	Incentive Metric	Target Goal	Weight	Incentive	
Residential Programs (Sector Level) Sector Budget	\$17,144	Retail Products	31,034,345	269	25,845	74,664	0	Sum of CT Efficiency Test Benefit from Residential programs	CT Efficiency Test Benefit from Res programs	0.2099	\$412,311
		New Construction	18,554,325	481	0	405,023	0				
		Home Energy Solutions	10,558,045	110	965,749	17,731	0				
		HVAC	(6,775,952)	225	3,440,582	1,513,254	473,188				
		HES-Income Eligible	(1,581,095)	0	1,014,292	80,824	29,123				
		Behavior	4,043,136	0	0	0	0				
		Total	55,832,805	1,084	5,446,467	2,091,495	502,311				
		Total MMBtu	190,502		755,371	191,016	48,691				
		Savings Rate	\$0.08181 /kWh	\$3,447.83 /kW	\$3.45	\$3.55	\$0.82				
		Savings	\$4,567,540	\$3,737,452	\$18,773,197	\$7,429,485	\$410,351				
Net CT Efficiency Test Benefit - Res.		CT Efficiency Test Benefit less Program Costs		\$17,774,177				\$17,774,177	0.2099	\$412,311	
Residential Active Demand Response	\$904	Residential ADR			6,699	kW					
		Residential ADR Savings	\$1,375,250	Residential ADR Savings Rate	\$205.29	\$/kW	Residential DR Benefit	\$1,375,250	0.0045	\$8,839	
Net CT Efficiency Test Benefit Residential Active Demand Response		System Benefit less Program Costs				\$471,662	Net Benefit Residential DR	\$471,662	0.0045	\$8,839	

United Illuminating Electric PMI (2024) (continued)

SECTOR		Performance Indicators					Incentive Metrics					
							Incentive Metric	Target Goal	Weight	Incentive		
RESIDENTIAL		Program Name	LT-kWh	kW	LT Oil Gal	LT Prop Gal	LT GAS CCF Savings from Electrification					
Home Energy Solutions	\$5,219	Electric Savings LTKWh :			10,558,045			Energy Savings included in appropriate sector-level metric				
		Demand Savings kW:			110							
		Number of HES homes that receive insulation rebates divided by the number of homes that receive the HES Assessments. Based on 2019 actuals for 2022, then based on the previous year's actuals thereafter plus 2.0% (22.19%+2%). (Baseline for 2022 will be 2019, for 2023 will be 2022 actuals, and for 2024 will be 2023 actuals. Baselines will be calculated for Eversource and UI together.)							Increase Homes being Weatherized	24.19% of homes that receive insulation rebates	0.0250	\$49,108
Residential New Construction	\$1,106	Electric Savings LTKWh :			18,554,325			Energy Savings included in appropriate sector-level metric				
		Demand Savings kw :			481							
		Retain 50% of volume/production builders (defined as builders who have completed at least seven homes, statewide, in the Residential New Construction program over the last 3 years) for program year 2024. Retainment will be defined as those builders who enroll at least 1 all-electric home in Program Year 2024.							% Retention for 2024 Program Year	50% of volume/production builder participants	0.0100	\$19,643
		Develop a Greenhouse Gas ("GHG") Emissions - GHG metric comparing GHG emissions above RNC program baseline.									0.0050	\$9,822
HES-Income Eligible	\$6,069	Electric Savings LTKWh :			(1,581,095)			Energy Savings included in appropriate sector-level metric				
		Demand Savings kW :			0							
		Number of HES-Income Eligible homes that receive insulation upgrades is divided by the number of homes that receive the HES-Income Eligible Assessments. Based on 2019 actuals for 2022, then based on the previous year's actuals thereafter plus 2.0% (62%+2%). (Baseline for 2022 will be 2019, for 2023 will be 2022 actuals, and for 2024 will be 2023 actuals. Baseline will be calculated with all the Companies together.)							Increase in homes being weatherized	64% of homes that receive insulation upgrades	0.0300	\$58,930
Equitable Distribution		1. The Companies will track the participation in 1–4-unit HES or HES-IE from January 1, 2024 through December 31, 2024 of all electric customers that are coded "hardship" (i.e., MPP, Eversource New Start, and UI Forgiveness programs) at February 1, 2024 and achieve 2.3% participation and at least 476 customers; and also 2. The Companies must have a plan in place that enables them to measure EJC (Environmental Justice Community) participation by the end of Q2 2024. By the end of Q2 2024, the plan must be shared with the EEB by the end of Q2-2024 and by the end of Q2-2024 the Companies will develop a 2023 baseline which will enable finalization of the 2025 Equity PMI.						Achieve 2.3% participation and serving at least 476 customers, and the EJC plan and baseline	0.0200	\$39,286		

United Illuminating Electric PMI (2024) (continued)

SECTOR		Performance Indicators						Incentive Metrics				
								Incentive Metric	Target Goal	Weight	Incentive	
COMMERCIAL & INDUSTRIAL (C&I)		Program Name	LT-kWh	kW	LT Oil Gal	LT Prop Gal	LT GAS CCF Savings from Electrification					
C&I Programs (Sector Level) Sector Budget	\$18,957	Energy Conscious Blueprint	87,925,698	729	377,211	517,002	437,276		CT Efficiency Test Benefit from C&I programs	0.1745	\$342,774	
		Energy Opportunities	90,263,642	942	0	5,577	0					
		Business and Energy Sustainability	20,111,914	409	0	0	0					
		Small Business	49,265,987	761	88,458	134,790	75,847					
		Total	247,567,241	2,842	465,669	657,369	513,123					
		Total MMBtu	844,699	0	64,584	60,037	47,147					
		Savings Rate	\$0.08322	/kWh	\$1,883.54	kW	\$3.11	\$3.58	\$0.6164			
		Savings	\$20,602,102		\$5,353,014		\$1,447,410	\$2,354,943	\$316,312			
(1) Percent of target goal												
Net CT Efficiency Test Benefit – C&I.		CT Efficiency Test Benefit less Program Costs			\$11,116,608				\$11,116,608	0.1745	\$342,774	
C&I Active Demand Response	\$551	C&I ADR			5,358	kW						
		C&I ADR Savings	\$905,449	C&I ADR Savings Rate	\$168.98	\$/kW			C&I DR Benefit	\$905,449	0.0111	\$21,804
Net CT Efficiency Test Benefit C&I Active Demand Response		System Benefit less Program Costs			\$546,029				Net Benefit C&I DR	\$546,030	0.0111	\$21,804

United Illuminating Electric PMI (2024) (continued)

SECTOR		Performance Indicators					Incentive Metrics			
							Incentive Metric	Target Goal	Weight	Incentive
COMMERCIAL & INDUSTRIAL (C&I)		Program Name	LT-kWh	kW	LT Oil Gal	LT Prop Gal	LT GAS CCF Savings from Electrification			
Commercial & Industrial Retrofit (Energy Opportunities)	\$8,583	Develop and implement comprehensive projects. Comprehensive projects shall be defined as: signed LOAs within the current program year that result in projects with at least 2 measures with different end uses, projects receiving tier 2 or tier 3 incentives, enhanced or high-performance lighting projects, or BES projects that result in a signed LOA within the current program year. Based on Prior Year Actual results + 5% (34%+5%).					Continue to promote comprehensive projects	39% of all signed projects	0.0250	\$49,108
Commercial & Industrial New Construction (Energy Conscious Blueprint)	\$4,851	Number of C&I new construction/major renovation projects that utilize Path 1 or Path 2. Projects will count towards this KPI in the year they have a signed study agreement or LOA.					Continue to advance projects that are more efficient than the State Energy Code, net zero, etc.	15% of signed projects	0.0200	\$39,286
Small Business	\$4,358	Electric Saving LTkWh :	49,265,987			Energy Savings included in appropriate sector-level metric				
		Demand Saving kW :	761							
		Develop and implement comprehensive projects. Comprehensive projects shall be defined as: signed LOAs or customer assessments within the current program year that result in projects with at least 2 measures with different end uses, projects receiving tier 2 or tier 3 incentives, enhanced or high-performance lighting projects, or BES projects that result in a signed LOA or customer assessment within the current program year. Based on Prior Year Actual results + 5% (33%+5%).	Continue to promote comprehensive projects	38% of signed projects	0.0250	\$49,108				
Equitable Distribution		1. Fully executed project agreements for customers in Department of Economic and Community Development (DECD) Towns; and also 2. The Companies must have a detailed plan in place that enables them to measure program participation in EJC (Environmental Justice Community) by the end of 2024. The plan must be shared with the EEB by the end of Q2-2024 and by the end of Q4-2024 the Companies will develop a 2023 baseline which will enable finalization of the 2025 Equity PMI.				Continue to promote equity in the C&I sector	69 LOAs in UI territory and EJC plan and baseline	0.0150	\$29,465	
Strategic Energy Management	\$1,165	United Illuminating will engage 4 participants in the Strategic Energy Management Program and new participants will deliver a minimum total of 100,000 kWh annual realized savings for SEM measures. Total PMI Incentive earned $\geq ((\text{Participants}/4 * (.5 * .0150)) + (\text{Savings}/100,000 * (.5 * .0150)))$ *Participant includes a single customer site or a cohort unique site from a single customer participating as a cohort. **Cohort Participants may include individual customers with multiple sites.				Promote Strategic Energy Management (SEM) Initiatives	4 CEE SEM Minimum Elements 100,000 kWh Savings	0.0150	\$29,465	
Evaluation		Timely turnaround on purchase orders and Evaluation Data requests based on agreed upon timelines for each study. Sliding scale as noted in the PMI exhibit - with 100% of goal achievement based on 90% of the data requests and purchase orders being completed on time.				Timely turnaround	Based on 90% of data request and purchase orders	0.0100	\$19,643	
Total of Incentives									1.00000	\$1,964,321

Exhibit SLS-4



Building a New Economy, Together.

Energy Democracy

And Best Practices for Community Engagement

What is Energy Democracy?

Wikipedia: Energy democracy calls for expanding public participation in the renewable energy transition and the broader functionings of the energy sector. In doing so, advocates argue that energy policy and decision-making will better incorporate local knowledge and the environmental justice concerns of local communities.

K4ED: Energy democracy is a democratic, equitable, and resilient energy system that works for all Kentuckians; one that ensures energy is affordable, clean, and safe.

Appalachian Voices: Energy Democracy is local people having control of how their electricity is produced and distributed to ensure everyone has access to affordable and clean power.

Kentuckians for the Commonwealth: Energy Democracy is the simple idea that communities, not companies, should control and benefit from our energy resources and systems. We know it's not enough to advance clean energy solutions, unless those solutions are also putting power in the hands of residents, workers, and low-income and people-of-color communities.



1991: The First People of Color Environmental Leadership Summit



WE, THE PEOPLE OF COLOR, gathered together at this multinational People of Color Environmental Leadership Summit, to begin to build a national and international movement of all peoples of color to fight the destruction and taking of our lands and communities, do hereby re-establish our spiritual interdependence to the sacredness of our Mother Earth; to respect and celebrate each of our cultures, languages and beliefs about the natural world and our roles in healing ourselves; to ensure environmental justice; to promote economic alternatives which would contribute to the development of environmentally safe livelihoods; and, to secure our political, economic and cultural liberation that has been denied for over 500 years of colonization and oppression, resulting in the poisoning of our communities and land and the genocide of our peoples, do affirm and adopt these Principles of Environmental Justice:

The Principles of Environmental Justice (EJ)

- 1) **Environmental Justice** affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.
 - 2) **Environmental Justice** demands that public policy be based on mutual respect and justice for all peoples, free from any form of discrimination or bias.
 - 3) **Environmental Justice** mandates the right to ethical, balanced and responsible uses of land and renewable resources in the interest of a sustainable planet for humans and other living things.
 - 4) **Environmental Justice** calls for universal protection from nuclear testing, extraction, production and disposal of toxic/hazardous wastes and poisons and nuclear testing that threaten the fundamental right to clean air, land, water, and food.
 - 5) **Environmental Justice** affirms the fundamental right to political, economic, cultural and environmental self-determination of all peoples.
 - 6) **Environmental Justice** demands the cessation of the production of all toxins, hazardous wastes, and radioactive materials, and that all past and current producers be held strictly accountable to the people for detoxification and the containment at the point of production.
 - 7) **Environmental Justice** demands the right to participate as equal partners at every level of decision-making, including needs assessment, planning, implementation, enforcement and evaluation.
 - 8) **Environmental Justice** affirms the right of all workers to a safe and healthy work environment without being forced to choose between an unsafe livelihood and unemployment. It also affirms the right of those who work at home to be free from environmental hazards.
 - 9) **Environmental Justice** protects the right of victims of environmental injustice to receive full compensation and reparations for damages as well as quality health care.
 - 10) **Environmental Justice** considers governmental acts of environmental injustice a violation of international law, the Universal Declaration On Human Rights, and the United Nations Convention on Genocide.
 - 11) **Environmental Justice** must recognize a special legal and natural relationship of Native Peoples to the U.S. government through treaties, agreements, compacts, and covenants affirming sovereignty and self-determination.
 - 12) **Environmental Justice** affirms the need for urban and rural ecological policies to clean up and rebuild our cities and rural areas in balance with nature, honoring the cultural integrity of all our communities, and provided fair access for all to the full range of resources.
 - 13) **Environmental Justice** calls for the strict enforcement of principles of informed consent, and a halt to the testing of experimental reproductive and medical procedures and vaccinations on people of color.
 - 14) **Environmental Justice** opposes the destructive operations of multi-national corporations.
 - 15) **Environmental Justice** opposes military occupation, repression and exploitation of lands, peoples and cultures, and other life forms.
 - 16) **Environmental Justice** calls for the education of present and future generations which emphasizes social and environmental issues, based on our experience and an appreciation of our diverse cultural perspectives.
 - 17) **Environmental Justice** requires that we, as individuals, make personal and consumer choices to consume as little of Mother Earth's resources and to produce as little waste as possible; and make the conscious decision to challenge and reprioritize our lifestyles to ensure the health of the natural world for present and future generations.
- More info on environmental justice and environmental racism can be found online at www.ejnet.org/ej**

Delegates to the First National People of Color Environmental Leadership Summit held on October 24-27, 1991, in Washington DC, drafted and adopted these 17 principles of Environmental Justice. Since then, the Principles have served as a defining document for the growing grassroots movement for environmental justice.



1996: The Jemez Principles

SW Network for Environmental & Economic Justice

#1
Be Inclusive

#2
**Emphasis on
Bottom-up
Organizing**

#3
**Let People
Speak for
Themselves**

#4
**Work Together
in Solidarity &
Mutuality**

#5
**Build Just
Relationships
Among Ourselves**

#6
**Commitment
to Self-
Transformation**



1996: The Jemez Principles

SW Network for Environmental & Economic Justice

Jemez Principles for Democratic Organizing

Meeting hosted by Southwest Network for Environmental and Economic Justice (SNEEJ), Jemez, New Mexico, Dec. 1996

Activists meet on Globalization

On December 6-8, 1996, forty people of color and European-American representatives met in Jemez, New Mexico, for the "Working Group Meeting on Globalization and Trade." The Jemez meeting was hosted by the Southwest Network for Environmental and Economic Justice with the intention of hammering out common understandings between participants from different cultures, politics and organizations. The following "**Jemez Principles**" for democratic organizing were adopted by the participants.

#1 Be Inclusive

If we hope to achieve just societies that include all people in decision-making and assure that all people have an equitable share of the wealth and the work of this world, then we must work to build that kind of inclusiveness into our own movement in order to develop alternative policies and institutions to the treaties policies under neo-liberalism.

This requires more than tokenism, it cannot be achieved without diversity at the planning table, in staffing, and in coordination. It may delay achievement of other important goals, it will require discussion, hard work, patience, and advance planning. It may involve conflict, but through this conflict, we can learn better ways of working together. It's about building alternative institutions, movement building, and not compromising out in order to be accepted into the anti-globalization club.

#2 Emphasis on Bottom-Up Organizing

To succeed, it is important to reach out into new constituencies, and to reach within all levels of leadership and membership base of the organizations that are already involved in our networks. We must be continually building and strengthening a base which provides our credibility, our strategies, mobilizations, leadership development, and the energy for the work we must do daily.

#3 Let People Speak for Themselves

We must be sure that relevant voices of people directly affected are heard. Ways must be provided for spokespersons to represent and be responsible to the affected constituencies. It is important for organizations to clarify their roles, and who they represent, and to assure accountability within our structures.

#4 Work Together In Solidarity and Mutuality

Groups working on similar issues with compatible visions should consciously act in solidarity, mutuality and support each other's work. In the long run, a more significant step is to incorporate the goals and values of other groups with your own work, in order to build strong relationships. For instance, in the long run, it is more important that labor unions and community economic development projects include the issue of environmental sustainability in their own strategies, rather than just lending support to the environmental organizations. So communications, strategies and resource sharing is critical, to help us see our connections and build on these.

#5 Build Just Relationships Among Ourselves

We need to treat each other with justice and respect, both on an individual and an organizational level, in this country and across borders. Defining and developing "just relationships" will be a process that won't happen overnight. It must include clarity about decision-making, sharing strategies, and resource distribution. There are clearly many skills necessary to succeed, and we need to determine the ways for those with different skills to coordinate and be accountable to one another.

#6 Commitment to Self-Transformation

As we change societies, we must change from operating on the mode of individualism to community-centeredness. We must "walk our talk." We must be the values that we say we're struggling for and we must be justice, be peace, be community.



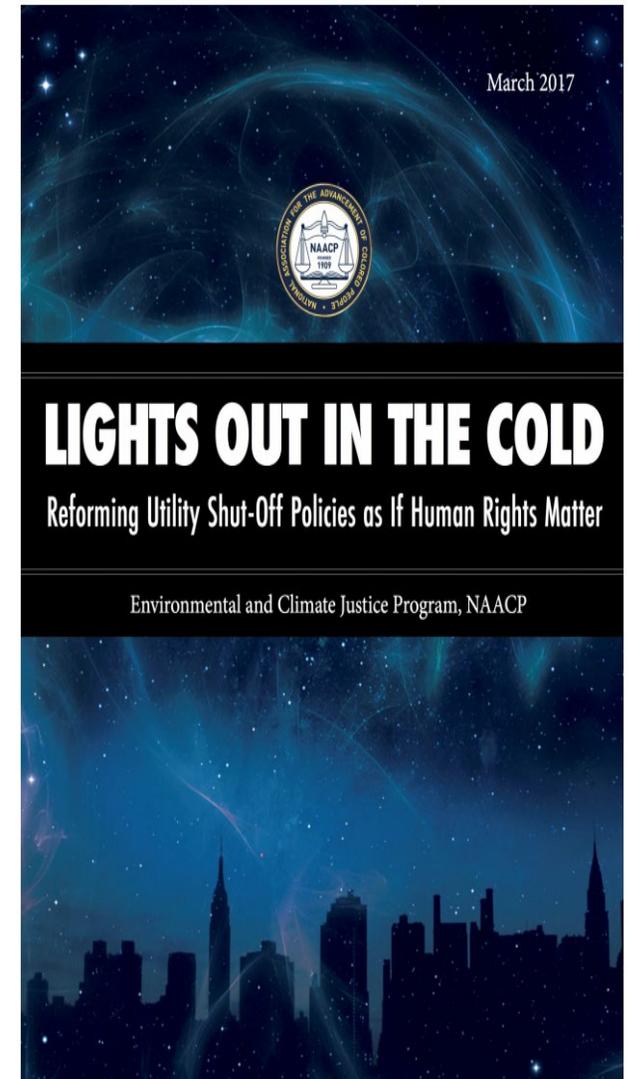
2017: Lights Out In the Cold:

Reforming Utility Shut-Off Policies as If Human Rights Matter

THE RIGHT TO UNINTERRUPTED ENERGY SERVICE

The establishment of a universal **right to uninterrupted energy service** would ensure that provisions are in place to prevent utility disconnection due to non-payment and arrearages.³ Toward establishing such a right, we call for all utility companies to advocate for and incorporate the following foundational principles into their models, operations, and policies:

1. Secure **ACCESS** to utility services for all households;
2. Ensure **INCLUSION** of all customers in the development of utility policies and regulations;
3. Create full **TRANSPARENCY** of the information and actions of utility companies, regulating bodies, legislatures, and utility affiliated organizations;
4. Guarantee the **PROTECTION** of the human and civil rights of all customers; and
5. Advance programs that help **ELIMINATE POVERTY**, so that all customers can pay utility bills.



The Spectrum of Community Engagement to Ownership

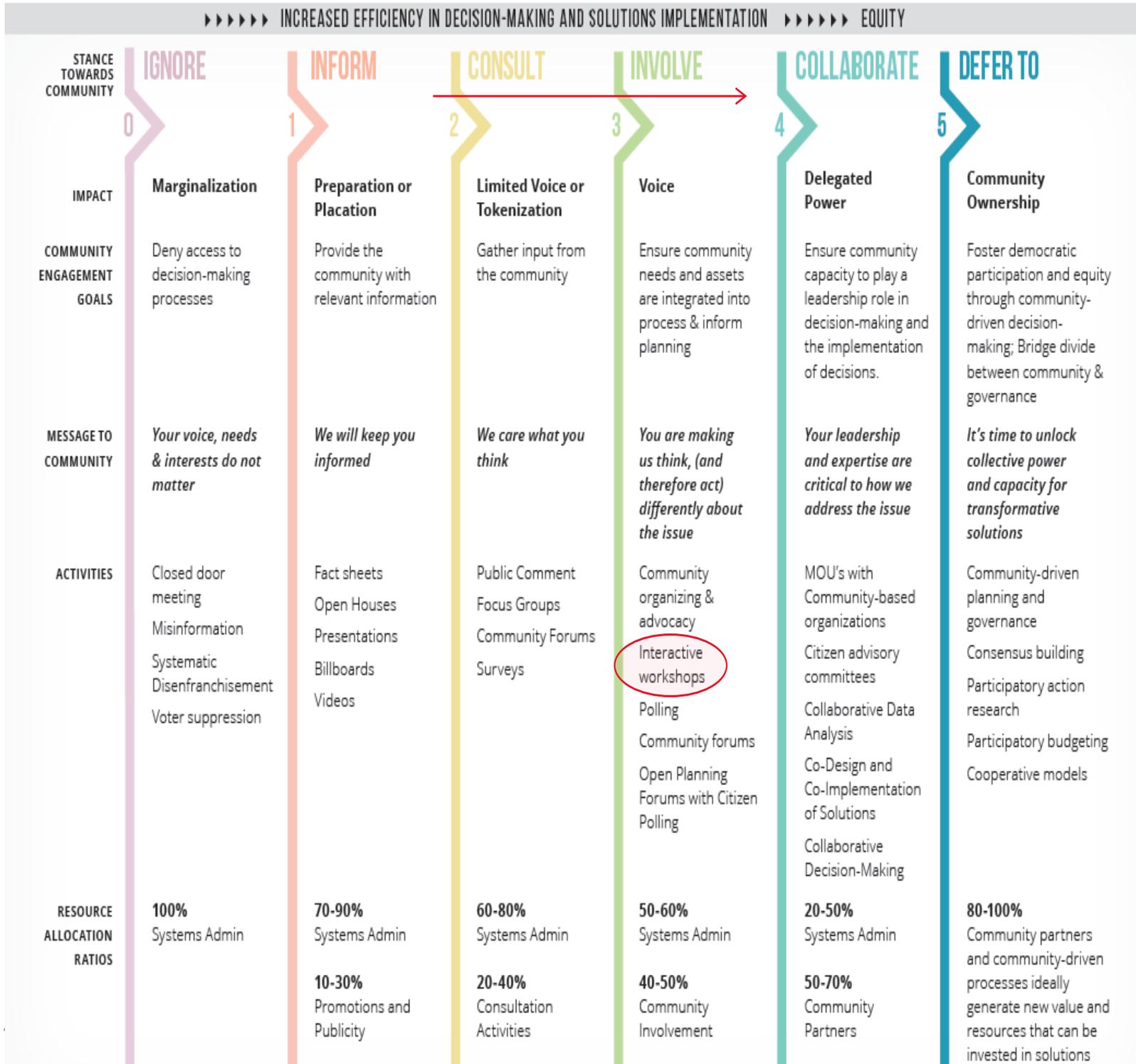


The Spectrum of Community Engagement to Ownership charts a pathway to strengthen and transform our local democracies. Thriving, diverse, equitable communities are possible through deep participation, particularly by communities commonly excluded from democratic voice & power. The stronger our local democracies, the more capacity we can unleash to address our toughest challenges, and the more capable we are of surviving and thriving through economic, ecological, and social crises. It is going to take all of us to adequately address the complex challenges our cities and regions are facing. It is time for a new wave of community-driven civic leadership.

Leaders across multiple sectors, such as community-based organizations, local governments, philanthropic partners, and facilitative leaders trusted by communities, can use this spectrum to assess and revolutionize community engagement efforts to advance community-driven solutions.



▶▶▶▶▶ INCREASED EFFICIENCY IN DECISION-MAKING AND SOLUTIONS IMPLEMENTATION ▶▶▶▶▶ EQUITY



UNDERSTANDING THE SPECTRUM WITHIN LOCAL CONTEXTS

Through facilitated dialogue, reflect on each of the developmental phases in the context of your city/region.

PHASE	DESCRIPTION	REFLECTION QUESTIONS
0 IGNORE MARGINALIZATION	<p>Marginalization represents the status quo, given current systems have been historically designed to exclude certain populations. If concerted efforts are not made to break-down existing barriers to participation, then by default, marginalization occurs. The history of the United States can be understood as generations of social movements striving to extend the rights of democracy to groups that have been previously excluded. The health of our democracy AND our economies depends on our capacity to recognize and address marginalization and exclusion. There is a direct connection between economic exclusion (slavery, taking land by force, taxation without representation, exploitation of labor, etc.) and political exclusion (denying citizenship and voting rights, top-down decision-making practices, etc.).</p>	<ul style="list-style-type: none">• What are the roots of systematic marginalization in your city/region? How is political exclusion related to local economic factors?• How does the legacy of political exclusion based on race and class persist to today? What forms does it currently take in your city/region?
1 INFORM PLACATION	<p>Information is the foundation for taking action towards real solutions to the threats we face. As the saying goes, knowledge is power. If, however, community engagement efforts remain at the level of one-way information sharing, such efforts result in placation. The role of the community is reduced to absorbing information from those with more positional power; meanwhile, the notion that every day people can actually shape solutions is stifled.</p> <p>Community-based organizations can play a key role in ensuring access to information about issues, services, solutions, etc. in ways that are culturally rooted and relevant.</p>	<ul style="list-style-type: none">• What does information flow look like for impacted communities in your city/region? What is contributing to information flow? What is hindering it?• Reflecting on existing community assets, what will it take for impacted communities to have equitable access to information about the issues that directly impact them?
2 CONSULT TOKENIZATION	<p>The most common form of 'community engagement' among mainstream institutions is consultation, usually in the form of semi-interactive meetings in which members of the community have the chance to offer input into pre-baked plans. This is of course a step up from one-way information-sharing; a two-way exchange is initiated. The biggest critique of this form of engagement is that decisions are often already made; the community input period simply serves to check a box. What's more, if the people participating have not had the chance to develop a shared analysis of the problem or articulate a shared vision, values, and priorities, with their peers, then they don't actually represent a 'community,' they are simply participating as individuals, and therefore are only 'tokens' of the community they are supposed to represent. This is the trap of consultation.</p>	<ul style="list-style-type: none">• When is it appropriate for impacted communities to be in a consultation role? What should impacted communities in your city/region be consulted on?• Where, in your experience of community engagement does it feel like consultation can be a trap?• What is needed to move beyond consultation and get to solutions that benefit from the genuine involvement of impacted communities?

PHASE

DESCRIPTION

REFLECTION QUESTIONS

3

INVOLVE

VOICE & POWER SHIFT

Community organizing and power building is needed to bring community engagement out of tokenization and into true involvement of impacted residents in the decisions that impact them. Community organizing offers vital elements to local democracies: 1) Community power puts needed pressure on local systems to make change; 2) Education and leadership development supports residents to make informed decisions that reflect the needs and interests of their communities; 3) Organizing builds the public will to develop, advocate for, and implement viable solutions; 4) Community organizing can also balance uneven power dynamics so that communities can effectively collaborate among sectors with more institutional power.

- What does it take for residents of impacted communities in your City to have a real voice in the decision-making that impacts them? What are the examples?
- What is needed to build sustained voice & power?
- What community-based organizations are building an informed base of resident leaders with the capacity to advocate on behalf of the needs and interests of the community?

4

COLLABORATE

DELEGATED POWER

As a culture of systems change develops through community organizing, advocacy, and relationship-building, the limits of local systems to carry out changes on their own becomes apparent. At this point, the opportunity to collaborate across sectors emerges and makes culture shift possible. Through the leadership and delegated power of community leaders, structures of participation can be made more accessible and culturally relevant to groups that have been historically excluded. In turn, collaboration requires and makes possible more trusting relationships and the healing of old divides within systems that tend to be more transactional. Collaboration also brings together unique strengths, assets, and capacities essential to enacting needed solutions, and that unconsciously go untapped.

- Where are the opportunities for meaningful collaboration between impacted communities & local government to co-develop solutions to racial & environmental injustices?
- To what extent have impacted communities built an informed base of community members with the power and influence to achieve policy & systems change?
- What culture shift and system changes are needed for authentic collaboration between institutions and impacted communities?

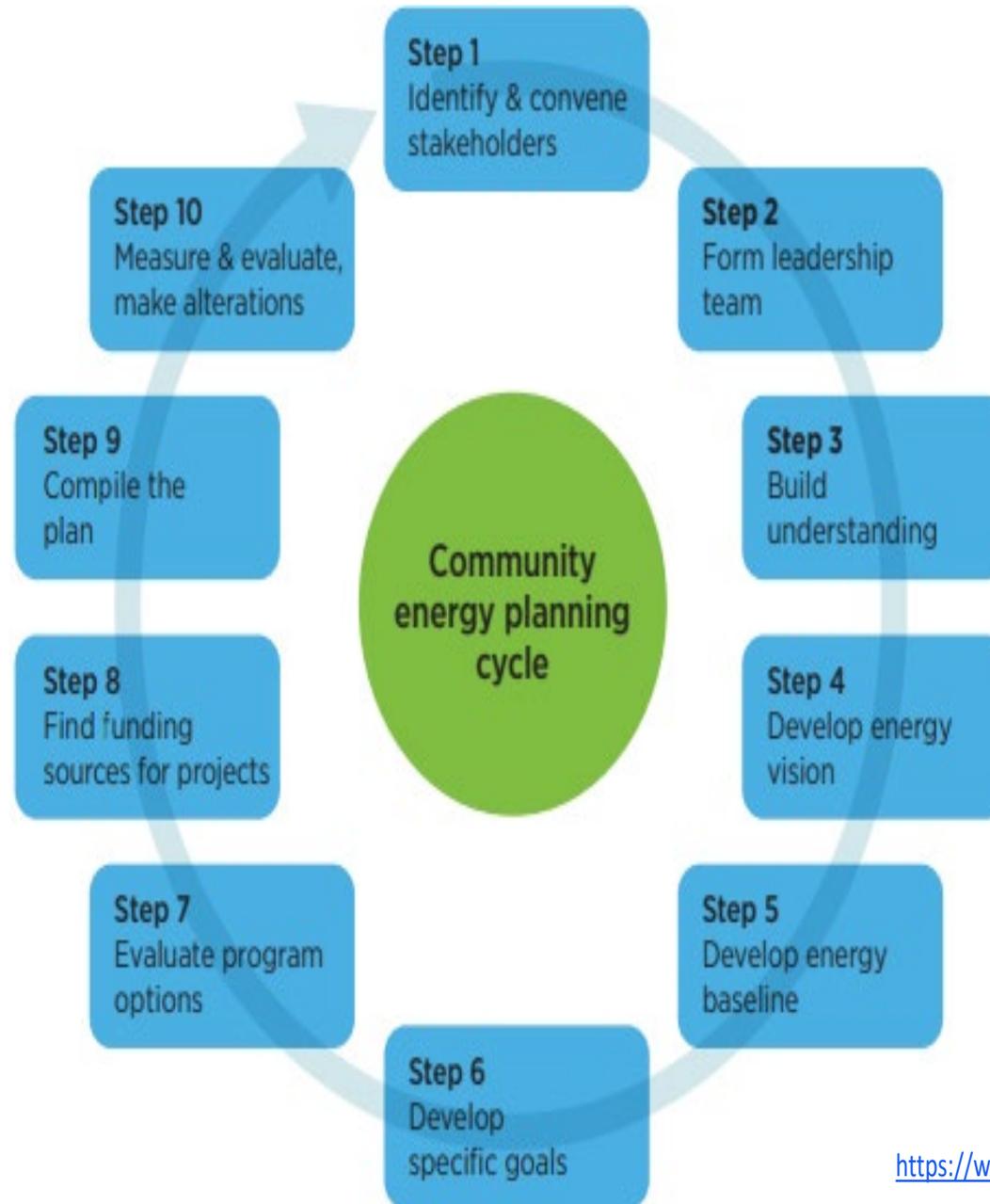


The Spectrum of Community Engagement: Discussion

- When is it appropriate for impacted communities to be in a consultation role? What should impacted communities in the region be consulted on?
- Where, in your experience of community engagement does it feel like consultation can be a trap?
- What is needed to move beyond consultation and get to solutions that benefit from the genuine involvement of impacted communities? What does it take for residents of impacted communities in eastern Kentucky to have a real voice in the energy decisions that impact them? What are some examples?
- *Who else might be consulted? What community-based organizations are building an informed base of resident leaders with the capacity to advocate on behalf of the needs and interests of the community?*
- *What changes or improvements would you like to see in energy efficiency to advance along the spectrum? What feels possible now?*



Community Energy Planning: Best Practices and Lessons Learned (NREL)



Community Engagement Resources

- [Energy Justice Scorecard \(IEJ\)](#)
- [Community Energy Planning: Best Practices and Lessons Learned \(NREL\)](#)
- [Fundamental Best Practices for Community Engagement \(WEACT\)](#)
- [Stakeholder Recommendations for Reducing Energy Insecurity in the Southeast United States \(SEISI\)](#)
- [Equitable Solar Policy Principles \(NAACP\)](#)
- [First National People of Color Environmental Leadership Summit](#)
- [Jemez Principles for Democratic Organizing](#)
- [Lights Out In the Cold \(NAACP\)](#)





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