COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC INVESTIGATION OF THE	**)**	
REASONABLENESS OF THE DEMAND SIDE	**)**	**CASE NO. 2017-00097**
MANAGEMENT PROGRAMS AND RATES	**)**	
OF KENTUCKY POWER COMPANY	**)**	

Direct Testimony of
Jim Grevatt
Energy Futures Group

On Behalf of Beverly May, Jim Webb, and Sierra Club

November 22, 2017

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I. INTRODUCTION AND QUALIFICATIONS.

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

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

Q. What is Energy Futures Group?

A. Energy Futures Group ("EFG") is an energy efficiency consulting firm established in 2010. EFG specializes in the design, implementation, and evaluation of energy efficiency programs and policies, with a particular emphasis on cutting-edge strategies to cost-effectively achieve deep levels of savings and broad program participation. EFG has worked on behalf of utilities and other energy efficiency program administrators; government and regulatory agencies; and environmental, low-income, and affordable housing advocacy organizations in more than 20 states, British Columbia, and several countries in Europe.

EFG's recent work has included serving as advisors on the development of efficiency program portfolios and policies in four of the six highest-ranking states in the American Council for an Energy-Efficient Economy's ("ACEEE") 2016 State Energy Efficiency Scorecard.[1] In addition, EFG played key roles in developing a report on lessons learned from leading residential retrofit programs in North America and Europe; an analysis on the key pitfalls in performing energy efficiency potential studies; a study of emerging practices in the use of energy efficiency to defer or avoid electric transmission and distribution upgrades; the development of a regional residential lighting strategy for the Northeast; and an assessment of the effectiveness of leading efficiency financing initiatives.

Q. Please summarize your professional and educational experience.

A. I have worked in the energy efficiency industry since 1991 in a wide variety of roles. Prior to joining EFG, I served as the Director of Residential Energy Services at both Efficiency Vermont and the District of Columbia Sustainable Energy Utility. I also served as the Manager of Energy Services at Vermont Gas Systems, managing both

[1] Weston Berg et al., *The 2016 State Energy Efficiency Scorecard*, ACEEE (Sept. 2016), available at http://aceee.org/sites/default/files/publications/researchreports/u1606.pdf.

residential and commercial utility energy efficiency programs. I have extensive hands-on experience conducting hundreds of energy audits for Vermont's Low-Income Weatherization Assistance Program and Vermont Gas Systems' Demand Side Management ("DSM") programs.

In my current role as Managing Consultant at EFG, I have advised public utility commissions and other regulators; utilities and other energy efficiency program administrators; and environmental, low-income, and affordable housing advocates in numerous states, including Missouri, Mississippi, Maryland, Pennsylvania, Delaware, Virginia, New Jersey, Illinois, California, Vermont, Maine, Nevada, and New Hampshire, as well as British Columbia.

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

My resume is attached hereto as Exhibit JG-1.

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

A. I am testifying on behalf of Beverly May, Jim Webb, and Sierra Club (together hereinafter "Sierra Club").

Q. Have you previously testified before the Kentucky Public Service Commission ("Commission")?

A. No.

II. OVERVIEW AND SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS.

Q. What is the purpose of your testimony?

A. The Commission opened this investigation due to concerns about significant increases in Kentucky Power Company's ("KPC" or "the Company") DSM rates and the worsening economic conditions in the Company's service territory.[2] The purpose of my testimony is to provide information for the Commission's consideration as it seeks to understand the causes of these recent increases and to identify solutions that maximize the benefits of

[2] Order, *In the Matter of: Electronic Investigation of the Reasonableness of the Demand Side Management Programs and Rates of Kentucky Power Company*, Case No. 2017-00097, at 1 (Feb. 23, 2017) ("Feb. 23 Order").

cost-effective energy efficiency programs and minimize any negative consequences on the Company's customers, particularly low-income customers.

Q. What did you examine in preparation for testifying in this investigation?

A. I have examined the Commission's orders, the Company's discovery responses, and the Company's filings in this docket. I have also examined the Company's filings in other DSM proceedings.

Q. Please summarize your primary conclusions.

A. My primary conclusions are summarized as follows:

1. The Company's current DSM portfolio includes a variety of programs aimed at both residential and commercial customers. The Company has exceeded its savings targets in each of the last two years, providing total estimated annual savings of nearly 59,000 GWh for tens of thousands of customers.

2. The Company's DSM programs help customers reduce their energy bills, which is especially important for lower-income customers given the adverse economic conditions in the Company's service territory.

3. The DSM rates have increased significantly over a very short time period in a way that does not appear to correlate with DSM expenditures. The spikes in the DSM rates that occurred in 2016 and 2017, and the proposed 88% drop in the residential DSM rates for 2018, do not reflect corresponding changes in the Company's DSM investments.

4. The recent dramatic increases in the DSM rates were driven by prior under-collections of DSM expenses. The Company caught up on prior under-collections by recovering this amount in addition to the actual costs of current DSM investments. This resulted in a spike in DSM rates.

5. Lost revenues recovery is not an added cost of DSM; it does not increase the amount that customers pay toward fixed costs. Lost revenues increased in 2016 but the reason is unclear.

6. The Company proposes dramatically reduced residential DSM rates for 2018 for the same level of DSM investments. The average residential DSM rates would drop 88%

from the current surcharge to $1.28 per month, while continuing to support roughly $6 million in DSM expenditures. The Company proposes these lower rates because there is no longer an under-collection to resolve.

7. The Company's current process for calculating the DSM rates does not provide an optimum level of transparency or rate stability, given that the dramatic DSM rate increase appears to have been a result of the Company's process for calculating the rates, which appears to have led to a sizeable under-collection.

8. Reducing the Company's cost-effective DSM program investments will deprive customers of important benefits, including the opportunity to lower their electricity bills and potentially lower overall system costs.

Q. Please summarize your recommendations.

A. I recommend that the Company continue to provide its customers with the multiple benefits of cost-effective DSM; focus on increasing its offerings to low-income customers; and improve the transparency, stability, and predictability of its DSM rates. Specifically, I recommend the following:

1. The Commission should approve the Company's request to continue funding all existing DSM programs at current levels (Alternative A), and to maintain KPC's obligation to invest at least $6 million in cost-effective DSM programs for its customers;

2. The Commission should direct the Company to explore opportunities to increase savings for participants in its existing low-income program; increase opportunities for low-income customers in other existing or new programs; and streamline existing programs to enhance benefits to all customers.

3. The Commission should clarify that lost revenues can be collected for up to three years, absent an intervening general rate case, but not to exceed the claimed savings life of measures.

4. The Commission and Company should consider alternative approaches for calculating the DSM rates to limit the potential for future volatility (i.e., avoid significant under- or over-collections) and increase transparency, while also providing

the Company with cost recovery for prudent investments in its DSM programs; a reasonable performance incentive; and reasonable lost revenue recovery related to DSM program savings.

III. DISCUSSION.

1. <u>The Company's current programs, savings, and cost-effectiveness.</u>

Q. Please describe the Company's DSM portfolio.

A. In 2013, KPC committed to increasing its investment in cost-effective energy efficiency and other DSM measures in a settlement agreement that the Commission approved as modified in Case No. 2012-00578 (the "Settlement").[3]

Before the current suspension, the Company provided a variety of programs that offer incentives and information to both residential and commercial customers. Generally, these programs help customers make more efficient choices when they are purchasing new products, building new commercial structures and purchasing mobile homes, upgrading insulation, and recycling refrigerators. The programs also support energy efficiency education in schools and provide home energy reports to individual customers. The Company has also partnered with local community action agencies by providing supplemental funding for weatherization and heating system upgrades for low-income families in the region through the Targeted Energy Efficiency program.

In 2016, the Company reported investing approximately $6.5 million in its programs and saved nearly 30,000 annual GWh.[4]

Q. Have you reviewed the performance of the Company's current portfolio of DSM programs?

A. I have reviewed the program data that Kentucky Power provided in discovery responses to Sierra Club in this proceeding.

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[3] Order, *In the Matter of: 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 35-36 (Oct. 7, 2013).
[4] KPC Response to Sierra Club's First Set of Data Requests, Item No. 10, KPCO_R_SC_1_10_Attachmentl.xlsx.

Q. What is your assessment of the programs?

A. Based on the data that I examined, the programs are cost-effective, with planned total resource cost benefit-cost ratios increasing from 1.24 in 2016 to 1.72 in 2025,[5] providing significant benefits to the Company's customers.[6] Tens of thousands of customers receive direct benefits from the programs every year.

I believe that the programs provide a variety of opportunities for customers with different interests, opportunities, and means to participate. However, given the severe economic hardships faced by many customers, I urge the Company to develop more opportunities for all of its customers to reduce the strain of high energy bills through efficiency, and to increase direct benefits to qualifying low-income customers that will help them reduce their energy bills.

Q. You mentioned the current suspension. What is your understanding of the current status of the Company's DSM programs?

A. Based on the Company's November 3, 2017 Notice in this case, my understanding is that other than activities already in progress, energy efficiency is effectively frozen in Kentucky Power's service territory—the Company indicated that it was suspending all new DSM activity effective November 3, 2017.

However, in its recent DSM status report, the Company also indicated that it wants to continue all existing programs.[7]

Q. What are the proposed residential DSM rates to continue the Company's existing programs at pre-suspension levels?

A. The Company proposes to continue to offer programs at an average DSM rate of $1.28 per month for residential customers, which is roughly 88% lower than the existing

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[5] *See* KPC Response to Sierra Club's First Set of Data Requests, Item No. 8; KPC Exhibit 6, *Kentucky Power Company (KPCO) Demand Side Management Program Plan*, Case No. 2015-000271, Aug. 10, 2015, at 24.

[6] A total resource cost test benefit-cost ratio greater than 1.0 means that the programs are cost effective. In other words, the benefits provided by the investment are greater than the costs.

[7] KPC'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, *In the Matter of: Electronic Investigation of the Reasonableness of the Demand Side Management Programs and Rates of Kentucky Power Company*, Case No. 2017-00097, at 10 (Nov. 15, 2017) ("KPC's Nov. 15 Filing").

monthly residential rate of \$10.61.[8] I discuss this proposal and the reason for the significant rate reduction later in my testimony.

Q. Do you believe the Company should continue to offer DSM programs?

A. Yes, I do.

2. <u>The benefits of energy efficiency in a region facing declining load and with adverse economic conditions.</u>

Q. In its orders in this proceeding, the Commission has expressed concerns about the costs of DSM for customers given declining loads and the adverse economic conditions in the Company's service territory. Do you share these concerns?

A. I agree that the economic challenges faced by many of the Company's customers are significant and that it is appropriate for the Commission to be concerned about the magnitude of DSM rates and rates in general.

However, my investigation of the causes of the recent dramatic increases in the Company's DSM rates leads me to conclude that the current DSM rates that exceed \$10 per month are not representative of the actual costs of DSM – which are relatively small – and that the benefits available to customers through DSM program participation can provide significant relief to customers who are experiencing financial hardship. In sum, it is not the level of the Company's current investment in cost-effective DSM that caused rates to spike in 2017, but rather the Company's method and timing of collection, as I discuss in detail later in my testimony.

I want to emphasize that DSM programs should be cost-effective. Cost-effective DSM, by definition, returns greater value than it costs. Typically, cost-effectiveness is measured by comparing the net present value of the benefits that DSM provides to the net present value of the costs. DSM provides multiple system-wide benefits for utility customers, including decreasing rates in the long term by reducing the need for expensive infrastructure development and/or energy and capacity purchases. These are the costs that are typically represented by the "avoided costs" that utilities use to measure program cost-effectiveness.

[8] *Id.* at 12.

Q. What are some of the other benefits of efficiency?

A. In my experience, targeted DSM programs are among the most effective tools that companies can offer customers who struggle with high utility bills. Such programs help customers reduce their energy use—and thus their energy bills—by increasing the efficiency of their homes without sacrificing basic needs, such as heat, hot water, refrigeration, air conditioning, and so on.

Energy efficiency is a proven tool for helping customers reduce their energy bills, and bill savings for customers who participate in energy efficiency programs can dwarf the modest rate impacts associated with program implementation. For example, Entergy Arkansas' 2016 Home Energy Solutions program saved participants an average of 3,504 kilowatt hours ("kWh") per year by supporting comprehensive home energy efficiency improvements to customers.[9] Further, as reported by ACEEE in *Recognizing the Value of Energy Efficiency's Multiple Benefits*, "[r]etrofits can improve occupants' health, safety, and comfort, in addition to lowering maintenance costs and increasing property value.... Residential energy efficiency is also shown to reduce utility bill arrearages, bad debt write-offs, and reliance on low-income household energy assistance." [10] Further, efficiency provides local economic benefits. For example, the Company recently reported that its DSM programs involve eight vendors, who locally employ 14 individuals to provide program services.[11]

3. <u>The Company's DSM rates changed significantly over a very short time period in a way that does not correlate with DSM expenditures.</u>

Q. What are the elements that comprise DSM rates currently, as you understand them?

A. The DSM rate is comprised of three elements that are intended to both allow the Company to recover its direct costs associated with the programs and earn a financial incentive for its successful performance. These elements are: (1) program costs, which

[9] Entergy Arkansas, Inc.'s Energy Efficiency Program Portfolio Annual Report for the 2016 Program Year, *In the Matter of the Application of Entergy Arkansas, Inc. for Approval of Energy Efficiency Programs and Energy Efficiency Cost Rate Rider*, Docket No. 07-085-TF, 2016 Program Year, May 1, 2017, available at http://www.apscservices.info/pdf/07/07-085-TF_626_1.pdf.

[10] Christopher Russel et al., *Recognizing the Value of Energy Efficiency's Multiple Benefits*, ACEEE (Dec. 2015), at v, available at http://aceee.org/research-report/ie1502.

[11] KPC's Nov. 15 Filing at 5.

are the actual expenditures made by the Company to operate the programs and include customer incentives; (2) lost revenues, which represent the portion of the Company's fixed operating costs that would have been recovered through the energy charge in the absence of DSM;[12] and (3) incentives the Company receives for successfully saving energy for its customers.[13]

A fourth component – and one that is especially significant in this investigation – is "a credit for any over-recovery, or the recovery of any under-recovery."[14]

Q. How have the DSM rates changed in recent years?

A. The Company's DSM rates increased very significantly over a very short timeframe in 2016 and 2017. As described by the Commission in opening this investigation, "Kentucky Power's residential customers this time last year paid a monthly average DSM charge of $.51. Since January 2017 the average monthly charge has been $10.61."[15]

To be sure, this is an extraordinary change over a brief span of time and it merits further exploration. It is critical that the elements of utility fees and charges, including those related to DSM, are transparent so that regulators and stakeholders can ensure that they are in the best interests of ratepayers.

Q. What is the relationship between the Company's DSM rates and its DSM spending?

A. I would expect there to be a relatively linear relationship, such that as DSM spending increases, so too do the DSM rates. However, the historical relationship between the Company's DSM spending and the DSM rates does not demonstrate this relationship. Specifically, while DSM program costs increased gradually, in large part due the Company's investment obligation in the Settlement, the DSM rates declined sharply, and then increased dramatically in ways that do not seem related to the gradual increase in DSM spending.

[12] As I explain later in my testimony, while lost revenues are a component of the DSM rates, they are not an actual cost of DSM. The Company will collect this revenue with or without DSM, either through the DSM rates when DSM reduces the amount of energy sold or by selling more energy in the absence of DSM. In the former case, they are called "lost revenues" but in the latter, they are simply revenues.

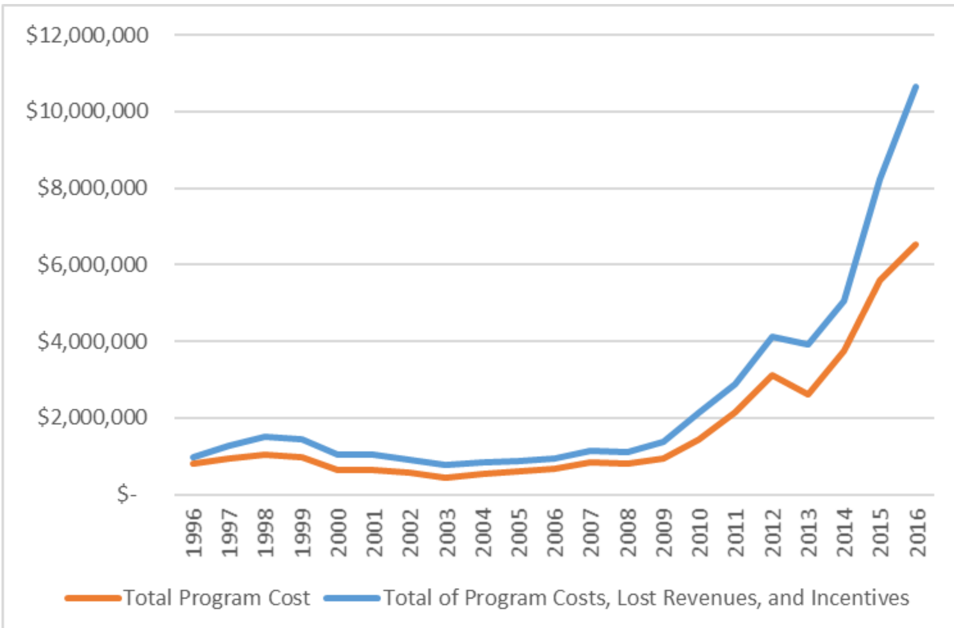
[13] KPC Response to Sierra Club's First Set of Data Requests, Item No. 11, at 1.

[14] *Id.*

[15] Feb. 23 Order at 1.

Figure 1, below, shows annual DSM program costs and the total annual DSM cost recovery amounts, including program costs, lost revenues, and performance incentives. For the most part, both program costs and cost recovery amounts began to increase beginning in 2009 and continued to increase, but at a slightly greater rate, starting in 2013.

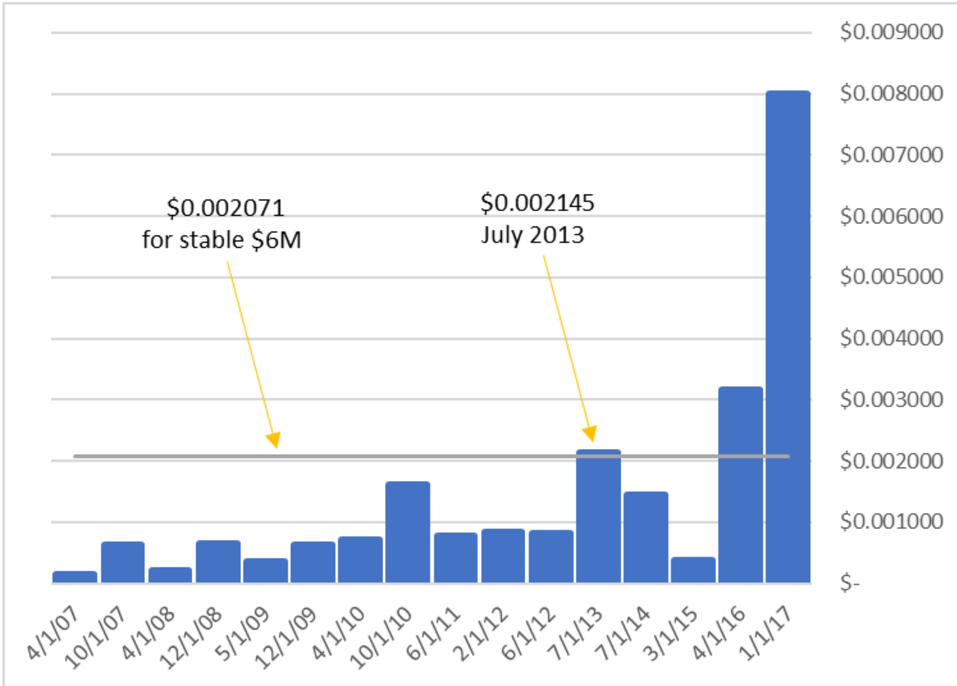
Figure 1: Annual DSM Portfolio Costs[16]



However, as seen in Figure 2 below, the DSM rates experienced erratic changes during the same time period. The DSM rates remained relatively flat in 2011 and 2012 despite program growth, then spiked higher in 2013 before decreasing significantly in 2014 and 2015, and then increasing even more significantly in 2016 and 2017. Thus, the relationship between the DSM rates and program costs is not what I would expect.

[16] KPC Response to Sierra Club's First Set of Data Requests, Item No. 11, KPCO_R_SC_1_11_Attachment2, tabs "Historical Data," "Year 2015 – 2nd Half," "Year 2016 – 1st Half," "Year 2016 – 2nd Half."

Figure 2: Residential DSM Rates Factor[17]



Q. What else have you observed in examining the history of the Company's residential DSM rates?

A. The residential DSM rates increased on July 1, 2013, to $0.002145/kWh. This amount is slightly greater than the amount that the Company indicated would be needed to recover program costs, lost revenues, and incentives for a $6 million DSM portfolio,[18] which is indicated by the horizontal line in Figure 2 ($0.02071/kWh).

The Company's approved DSM rate calculation process is based on past, rather than anticipated, DSM costs. However, the fact that the amount needed to fund a $6 million DSM portfolio was already incorporated in rates, and then was abruptly decreased at a time when DSM investments were known to be increasing towards an ultimate $6 million investment illustrates that the DSM rates calculation process could be improved to better reflect the level of DSM investment, and provide customers with rate stability and predictability.

[17] KPC Response to Sierra Club's First Set of Data Requests, Item No. 13, KPCO_R_SC_1_13_Attachment1, tab "DSM Factors – Subpart A."

[18] KPC Response to Sierra Club's First Set of Data Requests, Item No. 16, KPCO_R_SC_1_16_Attachment1. Sierra Club asked the Company in discovery to estimate the DSM rates that would be required for a stable $6 million DSM investment so that it could better understand the discrepancy between the 2017 DSM rates and what should be required to meet the level of DSM investment required by the Settlement.

4. <u>The dramatic increases in the DSM rates were driven by prior under-collection of funds.</u>

Q. You have discussed how the DSM rates increased sharply in recent years. What is the primary driver of the dramatic increases in the DSM rates?

A. Based on my review of the Company's discovery responses in this investigation and prior DSM filings, and as confirmed by the Company's November 15, 2017 filing, the primary driver of the increased DSM rates is past under-collection. As the Company explained, the under-recovery "produced much of the increase in the Company's residential D.S.M factor identified by the Commission in its Order establishing this investigation."[19]

Q. How have the Company's increased DSM investments impacted the DSM rates?

A. In sharp contrast to the under-collection issue, increased DSM expenditures have increased the DSM rates by what appears to be a small amount. It would be reasonable to expect that the DSM rates would increase with the increase in expenditure, but that the increase would be modest and gradual. This has not been the case because the majority of the DSM rates increase was due to past under-collections, as the Company has confirmed.

Q. Given the level of investment in cost-effective DSM required by the Settlement, what is the scale of increase in the DSM rates that you would expect?

A. It is reasonable to think that the DSM rates would have increased modestly during the period of increasing DSM investments until it reached the level that is necessary for an ongoing $6 million annual total DSM expenditure. The Company estimated that a stable, $6 million annual DSM investment, absent any under- or over-collection, would result in a residential DSM rate of $0.002071/kWh and a commercial DSM rate of $0.001938/kWh, as referenced earlier in my testimony. This is significantly less than current DSM rates.

Q. If the increase in the DSM rates had stayed at the level you suggest above, how large would the impact have been on the total kWh rate the Company charges its residential customers?

A. The $0.002071/kWh residential DSM rates value that the Company indicated would be needed for a stable $6 million DSM investment, assuming there are no over- or under-

[19] KPC's Nov. 15 Filing at 4.

collections that need to be addressed, would be approximately 2% of the total kWh charge for a residential customer at current rates.

Q. What is your expectation regarding the future of the Company's DSM rates if the Company stays on track with a $6 million DSM spending floor?

A. I expect that the DSM rates will drop significantly from current levels. In discovery, the Company stated that it "anticipates that by the completion of the June 2017 billing cycle it will have recovered a majority of these previously unrecovered program costs and charges" and that "the DSM surcharge factors can be reduced to reflect immediately the anticipated reduction in the amount of the previously incurred but unrecovered program charges"[20] Indeed, the Company's request in its November 15 filing to reduce the residential rates by 88%, from $0.008013/kWh to $0.000969/kWh confirms this conclusion.[21]

5. <u>DSM impact on rates and recovery of fixed costs.</u>

Q. In your view, would reducing the amount of DSM expenditures provide immediate and adequate relief to ratepayers?

A. No. As described above, the main driver of the DSM rates increase is past under-collection. Moreover, ending the DSM programs now would not immediately eliminate the DSM rates. As discussed in the Company's November 15, 2017 filing, "even if program services are ordered to be wound down beginning December 2017, there is a 'tail' of past spending, continuing spending that cannot be suspended, incentives, and lost revenues that would still need to be reconciled and collected in 2018 through the D.S.M. charge."[22] Ending programs now would, however, deprive customers of important benefits, as discussed earlier in my testimony.

Q. Would scaling back the level of DSM investment eventually reduce the DSM rates impact?

A. It would, though it is critical to note that it would only reduce the amount that customers pay by that portion of the DSM rates that represents program costs and incentives. The lost revenue portion of the DSM rates represents costs that customers will incur, either

[20] KPC Response to Commission Staff's First Set of Data Requests, Item No. 6, at 2.
[21] KPC's Nov. 15 Filing at 10.
[22] KPC's Nov. 15 Filing at 11.

through the DSM rates or through the fixed cost portion of the energy charge, regardless of the level of DSM program investment. It is not an added cost of DSM.

Q. The Commission has noted that there has been a decline in load, electric sales, and number of customers in the Company's service territory.[23] Are these factors driving the surge in DSM rates?

A. I do not find evidence that these factors, or any resulting excess generating capacity, are drivers of the increase in the DSM rates. The amount of the DSM rates is solely a function of the DSM rates components as well as the protocols and practices that the Company follows in calculating the DSM rates. The challenges associated with declining load are non-trivial, but they are not a contributing factor to the DSM rates.

Q. In its November 2 Order in this case, the Commission raised the question of "whether Kentucky Power's residential customers should be paying higher rates to fund programs that encourage lower consumption when that lower consumption results in unrecovered fixed costs that will ultimately be charged back to residential customers through higher rates."[24] Please describe the relationship between reduced consumption due to energy efficiency and recovery of fixed costs.

A. In the context of the DSM rates, "unrecovered fixed costs" means the lost revenue portion of the DSM rates. This component is intended to make the Company "whole" in terms of the contribution to fixed costs that it collects as part of its rates. Importantly, lost revenue collections do not increase the amount that customers pay towards the Company's fixed costs; customers will pay the same amount towards fixed costs either with or without DSM.

Q. Please explain how customers would pay the same amount of fixed costs both with and without DSM.

A. Without efficiency, the Company would collect such costs through rates.

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[23] Feb. 23 Order at 4; Order, *In the Matter of: Electronic Investigation of the Reasonableness of the Demand Side Management Programs and Rates of Kentucky Power Company*, Case No. 2017-00097, at 4 (Nov. 2, 2017) ("Nov. 2 Order").

[24] Nov. 2 Order at 4.

Specifically, in the absence of DSM, the total contribution to fixed costs that the Company collects is equal to the fixed cost component of the energy charge times kWh sales.[25]

Because DSM results in fewer kWh being sold, the Company does not, in theory, collect sufficient funds to allow it to recover the contribution to fixed costs upon which its rates are based. Therefore, the DSM rate includes an additional sum—the lost revenue—that is intended to make up the difference. The lost revenue component recovers the fixed costs that are not recovered as part of the energy charge due to reduced sales.

It is critically important to understand that in the absence of DSM, the Company will sell more kWh, and in doing so will fully recover its fixed costs through the energy charge rather than through the lost revenue portion of the DSM rates. The amount that customers pay, in aggregate, to the utility's fixed costs does not change. Regardless of whether the Company collects funds to cover its fixed costs through the energy charge, or through a combination of the energy charge and lost revenue recovery attributed to DSM programs, the Company collects the same amount of money from its customers.

The important difference is that while the Company still collects the same amount from customers to cover its fixed costs, without DSM there are fewer opportunities for customers to also reduce their bills. I provide additional comments on recovery of fixed costs in the Company's pending general rate case, Case No. 2017-00179, in Section 8.

Q. What portion of DSM rates is the lost revenue component?

A. For the period 1996-2016, lost revenues made up 24% of the total amount collected through DSM rates, equivalent to approximately $12.6M, as illustrated in Figure 3.

[25] KPC also collects a portion of its fixed costs through the "Service Charge." Costs recovered through the Service Charge are not applicable in the calculation of lost revenues.

Figure 3: Historic Program Costs, Lost Revenues, and Incentives[26]

	1996-2016	Percent of Total Collections
Total Historic Program Costs	$35,567,529	68%
Total Lost Revenues	$12,649,964	24%
Total Incentives	$3,990,862	8%
Total DSM Collections	$52,208,355	

Q. Does this mean that lost revenue recovery increases the cost of DSM?

A. No. As discussed above, the Company would have collected these revenues through the energy charge by selling more kWh in the absence of DSM. Therefore, the actual cost of DSM from 1996-2016 is approximately $39.6M, the total of historic program costs ($35.6M) and incentives ($4.0M), rather than the $52.2M that was collected in DSM rates.

Q. Has the lost revenues portion of DSM rates been consistent over time?

A. In general, yes. However, lost revenues for 2016 are projected to be higher than the historical average – 35% of the total amount to be collected, as compared to the historical average of 24%.

Q. Do you know what caused the increase?

A. The answer is not clear to me after my review of the Company's filings and responses to discovery, and this could be worth a closer review by the Commission to fully understand why it is changing.

Q. How long does the Company collect lost revenues that are attributable to DSM programs?

A. My understanding is that the Company collects lost revenues for three years unless there is an intervening base rate case.[27]

[26] *See* KPCO_R_SC_1_11_Attachment2, tab "Historical Data."

[27] KPC Response to Sierra Club's Second Set of Data Requests, Item No. 4(f) ("Absent an intervening base rate case, the 'sunset provision' proposed by Kentucky Power in Case No. 95-427 establishing the Company's DSM program provides for the recovery of lost revenues for a three-year period.").

Q. Do you think this is a reasonable approach to lost revenue recovery?

A. Generally, with a caveat. Industry best-practice in jurisdictions allowing lost revenue collection is to ensure timely base rate adjustments so that lost revenues do not grow beyond reasonable limits. In the absence of timely base rate adjustments, it is reasonable for the Commission to limit the collection of lost revenues to some defined period of time, such as three years.

However, I do not believe it is reasonable for a utility to continue to collect lost revenues beyond the life of specific DSM measures (i.e. the duration for which savings are expected). If the measure life is less than three years, such that savings are no longer occurring, there are no longer any lost revenues associated with the measure. To collect lost revenues in that situation would result in over-charging customers, since they would be paying for the effects of savings that are not occurring.

Q. What do you recommend?

A. I recommend that the Commission clarify that lost revenues can be collected for up to three years, but not to exceed the claimed savings life of measures. This would ensure that the Company does not over-collect lost revenues for measures that are no longer saving energy and, therefore, are no longer reducing sales and the amount of contribution to fixed costs it collects through the energy charge.

6. <u>The Company's November 15, 2017 Filing.</u>

Q. Have you reviewed the Company's November 15, 2017 filing in this investigation?

A. Yes.

Q. What does the Company propose in this filing?

A. The Company presents two scenarios. Alternative A assumes that DSM programs are continued at the current level. In this scenario, the Company requests that the residential DSM rates be significantly reduced from $0.008013/kWh to $0.000969/kWh, and that the commercial DSM rates be slightly increased from $0.004206/kWh to $0.004320/kWh.[28] The Company also provides Alternative B for the Commission's information, which describes the DSM rates impacts of ending its DSM programs.

[28] KPC's Nov. 15 Filing at 11-12.

Q. Does the Company prefer one alternative to the other?

A. Yes, the Company prefers Alternative A, which assumes that the current programs are maintained at current budget levels, consistent with the Settlement.[29] I agree with the Company that Alternative A is in the best interest of its customers for the reasons stated in my testimony.

Q. You have discussed how in Alternative A, the residential DSM rates would decrease substantially. What information does the Company provide about the rate impacts of eliminating DSM in Alternative B?

A. The Company indicates that, using the best information it has available at the time of the filing, the residential DSM rates would become a very modest bill credit of $0.001403/kWh, while the commercial DSM rates would be reduced to $0.002867/kWh.[30] However, as I have already suggested, customers' bills will not be reduced by the amount that one might expect even if the DSM rates are reduced to $0/kWh. This is because the funds that are currently recovered as lost revenues would in the future be recovered through the energy charge in the absence of DSM.

7. The process for calculating the DSM rates does not provide an optimum level of transparency or rate stability.

Q. In your opinion, are the current DSM rates calculation procedures sufficiently transparent?

A. I do not believe they are. Sierra Club asked the Company in discovery to explain its DSM rates calculation procedures. While I appreciate the detailed responses and good faith efforts to explain the procedures, I remain unclear as to the precise magnitude of the various components of the DSM rates, and how the DSM rate calculation process led to such a significant under-collection. The Company stated that it is not possible to precisely answer questions about how much of the current DSM rates are attributable to past under-collection, noting that "money is fungible."[31] More transparency is needed. It is important for the Commission and customers to be able to understand each component of DSM rates.

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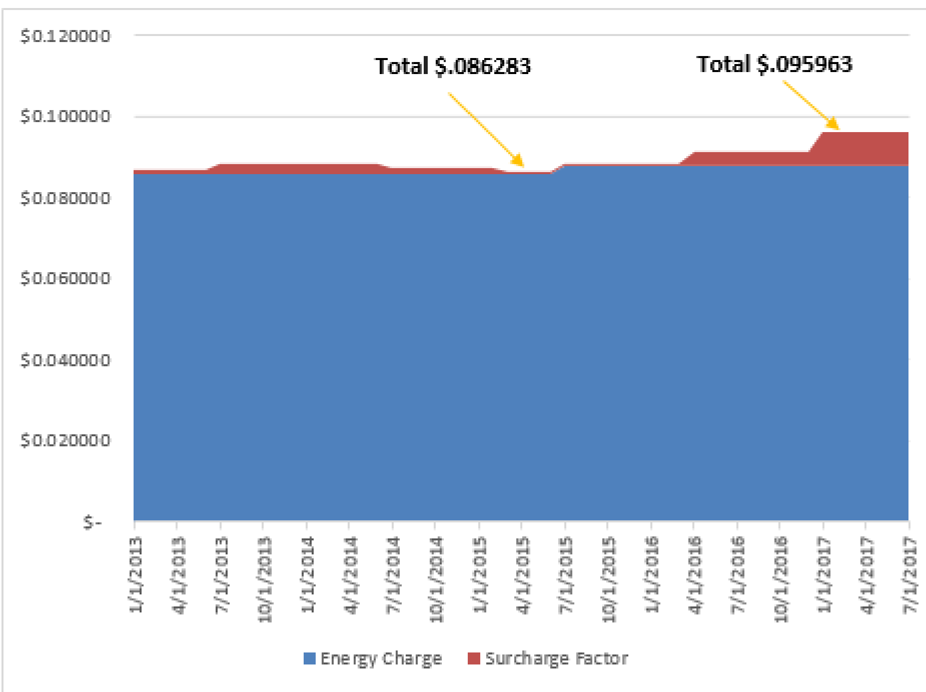
[29] *Id.* at 10.
[30] *Id.* at 11-12.
[31] KPC Response to Sierra Club's First Set of Data Requests, Item No. 14.

Q. If the Company is recovering funds in accordance with regulation, why is it important that the DSM rates remain stable over time?

A. The Company has a high percentage of low-income customers. Rate increases in general, but especially those that are sudden and unexpected, can have significant negative consequences for these customers who are not able to easily absorb sharp increases in monthly utility costs. Figure 2 showed the erratic pattern of the residential DSM rates over time. Figure 4**Error! Reference source not found.** below illustrates the total amount that residential customers paid per kWh used over the past several years, including the energy charge and DSM rates. The current calculation methodology resulted in several decreases to the DSM rates despite the fact that the Company was going to be increasing its investment in cost-effective DSM (pursuant to the Settlement). These DSM rates reductions had the unfortunate effect of leading to the subsequent dramatic increases that have occurred.

Figure 4: Combined Residential Energy Charge and DSM Rates

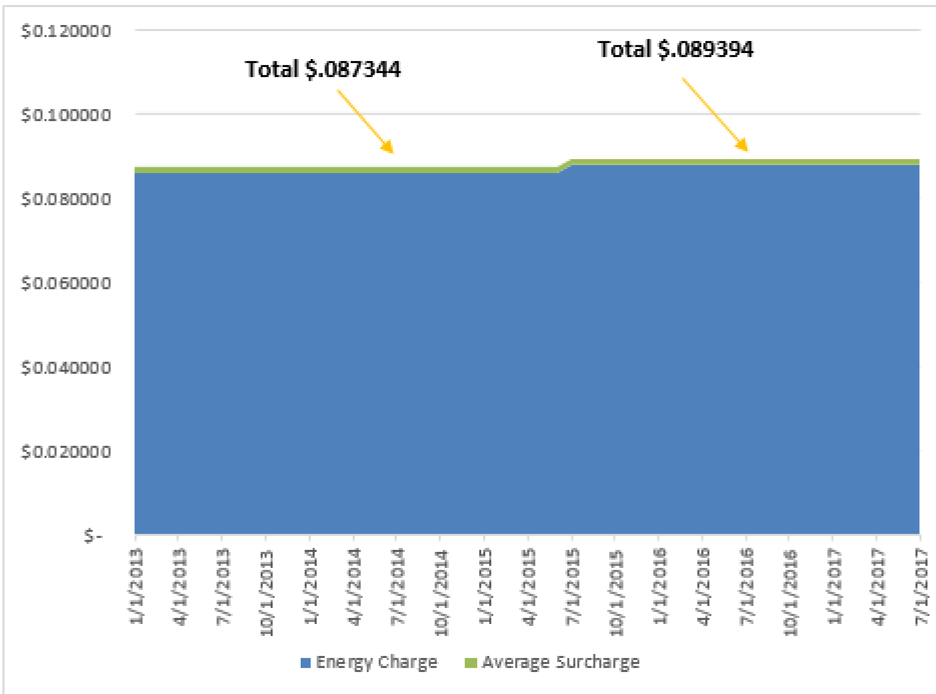


It is important for rates to be transparent, comprehensible, and predictable. Because DSM investments were increased gradually and then maintained at a stable level, the DSM rates should not have varied wildly.

Q. What would Figure 4 show in terms of total rate volatility and impact if the DSM rates had been calculated in a way intended to provide greater stability?

A. For the purposes of illustrating the contribution that the <u>average</u> DSM rates, since the beginning of the programs, would make to recent residential rates (including lost revenues), see Figure 5 below. The stability seen in the illustration is quite a contrast to the sharp drops and jumps that the actual DSM rates have taken. Note that the increase shown in mid-2015 was due to an increase in the energy charge, <u>not</u> in the DSM rates.

Figure 5: Combined Residential Energy Charge and Average DSM Rates



Q. Is there a way that the DSM rates could be calculated so as to minimize volatility for customers?

A. Yes, I believe that there are ways to improve the stability and transparency of the DSM rates. One approach that the Commission might consider exploring would be to determine forward-looking DSM rates that represent the expected amount of collections needed, based on the expected program costs, lost revenues, and incentives, with a true-up process for making small adjustments to account for any under- or over-collections that were made. Unlike the current backward-looking process, I believe that this would provide a much higher level of rate stability and transparency. With stable DSM rates based on expected DSM costs in place, a true-up adjustment to the DSM rates can be made on an annual basis when the Company reports its evaluated savings and expenditures.

8. Reducing the Company's DSM program investments will deprive customers of important benefits.

Q. Do you think that reducing the Company's DSM investments is beneficial for customers?

A. No. In my view, the Company's DSM programs provide valuable opportunities for its customers, especially those who struggle to make ends meet. For this reason, as well as all of the other reasons provided above, I do not think that reducing the Company's DSM programs would be a beneficial response to concerns about the magnitude of the DSM rates.

Q. What impact would scaling back the level of DSM investment have on the Company's customers?

A. Scaling back DSM investments that are cost-effective, such as DSM investments in the Company's portfolio, would deprive ratepayers of opportunities to save energy at their homes and businesses. As I discuss above, cost-effective DSM provides significant long-term system-wide benefits and helps customers lower their energy use and bills. Reducing the availability of DSM programs would make it harder for customers to manage their bills because they would have fewer tools available to them. We are already starting to see these negative consequences. For example, as a result of the current suspension, the Company has reported that sixty-two residential home weatherization audits scheduled for this month have been cancelled.[32] Additionally, as I discussed in Section 5, eliminating cost-effective DSM would provide negligible near-term rate relief, and would likely lead to long-term rate increases as the Company invests in more costly resources in the future to meet customer demand.

[32] KPC's Nov. 15 Filing at 6.

Q. What would be the best course of action for the Commission to take, in order to provide the Company's customers with relief from the short-term DSM rates increases?

A. Given the benefits that the DSM investment provides for ratepayers, my judgment is that it would be best if the Commission sustained the Company's DSM investment commitment at the current level. However, as described earlier in my testimony, the Commission may also want to explore a revised DSM rates calculation process that would compensate the Company fairly while providing increased protection for customers from unstable rate effects.

Q. Are there additional enhancements that the Company could make to improve the performance of the programs and/or make them more beneficial to customers?

A. The general descriptions that the Company provides of its programs, and especially of its low-income programs, suggest that there are many positive aspects to their design. That said, given the economic hardships facing customers, increasing access to energy savings opportunities for low-income customers should be a high priority for the Company. I would recommend that the Company explore opportunities to increase savings for participants in its existing low-income program, and also seek ways to increase opportunities for low-income customers in other existing or new programs.

I would further recommend that the Company streamline or consolidate its program offerings to reduce the associated administrative overhead it incurs. The number of unique programs that the Company offers is quite high for the size of the portfolio. Each such program requires management, tracking and reporting procedures, and if consolidation can lead to reduced administrative costs, perhaps those savings could be used to benefit more customers.

The Commission has clearly identified the severity of the challenges posed by high utility bills for the Company's customers, and I would urge that the solution be viewed through the lens of improving cost-recovery procedures, streamlining operational costs, and increasing access to program benefits for low-income customers. This will allow the Company to continue to provide significant benefits for its customers, reducing the gap between the amount of their energy bills and what they can afford to pay.

Q. Is there anything you would like to add about increasing energy affordability for low-income customers?

A. Yes. In its pending general rate case, Case No. 2017-00179, the Company proposes an increased monthly fixed charge for residential customers. In support of this proposal, Company witness Alex E. Vaughan testified that "[a] higher basic service charge will help lower income customers who, because they often do not have the resources to invest in weatherization and energy efficient appliances, have higher than average usage."[33]

This statement ignores two critical issues. First, while lower-income customers may not have the resources to invest in energy efficiency on their own, the Company should provide support for its lower-income customers through energy efficiency programs. As I stated earlier, it is my view that the Company can and should explore reasonable opportunities to improve the reach of its DSM programs for low-income customers. High fixed charges discourage energy efficiency because customers cannot mitigate these charges by taking actions to reduce their energy use.

Second, setting aside the issue of low-income DSM programs, lower-income customers must retain the ability to reduce their electricity bills by adjusting their usage. I recognize that this may not always be possible, and I am not proposing that the Company should expect that lower-income customers should make do with less. But all customers should be able to reduce their bills by using less if that is something they choose to do. A higher monthly fixed charge reduces the ability of customers to control their own energy bills and also reduces the incentive for customers to use less energy, because the amount they can save by reducing energy use is less.

IV. CONCLUSIONS AND RECOMMENDATIONS.

Q. Please summarize the conclusions that you have made in your testimony above.

A. Based on the evidence that I reviewed, it is clear to me that the Company's customers will benefit from the continued availability of energy efficiency programs. Many of the

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[33] Direct Testimony of Alex E. Vaughan, *In the Matter of: Electronic Application of Kentucky Power Company for (1) A General Adjustment of its Rates for Electric Service; (2) An Order Approving its 2017 Environmental Compliance Plan; (3) An Order Approving its Tariffs and Riders; (4) An Order Approving Accounting Practices to Establish Regulatory Assets and Liabilities; and (5) An Order Granting All Other Required Approvals and Relief*, Case No. 2017-00179, at 13:6-8 (June 28, 2017).

Company's customers face difficult economic conditions, and stand to benefit from the opportunities the Company provides to reduce their energy use and resulting energy bills through efficiency and conservation. To best aid these customers, the Company should strive to deliver the programs as efficiently and effectively as possible, so that as many customers as possible can participate in the programs, and so that those who do participate receive the maximum benefits available.

I further conclude that the significant increases in the DSM rates in 2016 and 2017 resulted from a previous under-collection, and not by the DSM spending obligation. The Company confirmed this in its November 15, 2017 filing. As a result, I suggest that the Commission and the Company consider exploring alternate procedures for calculating the DSM rates with a goal of increasing transparency in the calculation process rate stability in the DSM rates, so that customers are not burdened with DSM rates increases that are not in line with DSM expenditures.

Q. Does this conclude your direct testimony?

A. Yes, it does.

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC INVESTIGATION OF THE	**)**	
REASONABLENESS OF THE DEMAND SIDE	**)**	**CASE NO. 2017-00097**
MANAGEMENT PROGRAMS AND RATES	**)**	
OF KENTUCKY POWER COMPANY	**)**	

AFFIRMATION

I, Jim Grevatt, hereby state and affirm the following: the foregoing prepared Direct Testimony constitutes my direct testimony in the above-captioned proceeding; I would give the answers set forth therein if asked the questions propounded therein; and the answers contained therein are true and correct to the best of my information, knowledge and belief.

November 22, 2017 ____________________

Date   Jim Grevatt