

STITES & HARBISON PLLC

ATTORNEYS

421 West Main Street
Post Office Box 634
Frankfort, KY 40602-0634
(502) 223-3477
(502) 223-4124 Fax
www.stites.com

February 14, 2014

RECEIVED
FEB 14 2014
PUBLIC SERVICE
COMMISSION

Mark R. Overstreet
(502) 209-1219
(502) 223-4387 FAX
moverstreet@stites.com

HAND DELIVERED

Jeff R. Derouen
Executive Director
Public Service Commission
211 Sower Boulevard
P.O. Box 615
Frankfort, KY 40602-0615

RE: Case No. 2013-00487

Dear Mr. Derouen:

Enclosed please find and accept for filing the original and ten copies of Kentucky Power Company's responses to data requests propounded by Commission Staff and Sierra Club. Also enclosed is Kentucky Power's motion for leave to deviate and for confidential treatment

At the direction of counsel for Sierra Club, copies of the responses and the motion are being served by electronic transmission only to the persons indicated below. Please do not hesitate to contact me if you have any questions.

Very truly yours,


Mark R. Overstreet

MRO

cc: Jill Tauber
S. Laurie Williams
Joe Childers
Daniel Sawmiller

COMMONWEALTH OF KENTUCKY
BEFORE THE
PUBLIC SERVICE COMMISSION OF KENTUCKY

IN THE MATTER OF

APPLICATION OF KENTUCKY POWER COMPANY)
TO AMEND ITS DEMAND-SIDE MANAGEMENT)
PROGRAM AND FOR AUTHORITY TO IMPLEMENT)
A TARIFF TO RECOVER COSTS AND NET LOST) Case No. 2013-00487
REVENUES AND TO RECEIVE INCENTIVES)
ASSOCIATED WITH THE IMPLEMENTATION OF)
THE PROGRAMS)

KENTUCKY POWER COMPANY RESPONSES TO
ALEXANDER DESHA AND SIERRA CLUB INITIAL SET OF DATA
REQUESTS

February 14, 2014

VERIFICATION

The undersigned, Edgar J. Clayton, being duly sworn, deposes and says he is the Manager, Energy Efficiency & Consumer Programs for Kentucky Power, that he has personal knowledge of the matters set forth in the forgoing responses for which he is the identified witness and that the information contained therein is true and correct to the best of his information, knowledge, and belief

Edgar J. Clayton
Edgar J. Clayton

COMMONWEALTH OF KENTUCKY)
) CASE NO. 2013-00487
COUNTY OF BOYD)

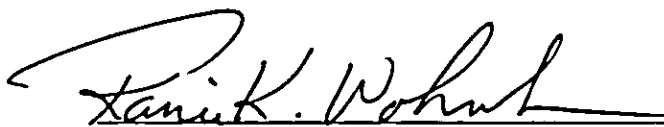
Subscribed and sworn to before me, a Notary Public in and before said County and State, by Edgar J. Clayton, this the 4th day of February, 2014.

Sabrina Leigh Jones
Notary Public #462811

My Commission Expires: 3-20-2016

VERIFICATION

The undersigned, Ranie K. Wohnhas, being duly sworn, deposes and says he is the Managing Director Regulatory and Finance for Kentucky Power, that he has personal knowledge of the matters set forth in the forgoing responses for which he is the identified witness and that the information contained therein is true and correct to the best of his information, knowledge, and belief



Ranie K. Wohnhas

COMMONWEALTH OF KENTUCKY)

) Case No. 2013-00487

COUNTY OF FRANKLIN)

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Ranie K. Wohnhas, this the 13th day of February 2014.



Notary Public

My Commission Expires: January 23, 2017

Kentucky Power Company

REQUEST

Provide all KPC responses to requests for information from all parties and Commission Staff in this proceeding.

RESPONSE

The Company has done so.

WITNESS: E J Clayton



Kentucky Power Company

REQUEST

Please provide Exhibit C of the Application in machine readable electronic format with formulas intact and cells unprotected.

RESPONSE

Please see the enclosed CD for Attachment 1 to this response.

WITNESS: Ranie K Woinhas



Kentucky Power Company

REQUEST

Refer to page 1 of the Company's Application cover letter to the Commission ("letter"), which states "The Company proposes a program portfolio for 2014 designed to capture additional energy and demand reduction opportunities." Please quantify the "additional energy and demand reduction opportunities" in megawatt-hours (MWh) and megawatts (MW), respectively, and provide any underlying analyses to support such figures.

RESPONSE

The reduction opportunity provided in Attachment 1 to this response is estimated based on the gross annual impact savings determined from program evaluations in 2011 and 2012. Please see Attachments 2 and 3 for the program evaluations that were used to determine the impact savings. Due to the voluminous nature of this response, Attachments 1-3 are being provided on the enclosed CD.

WITNESS: E J Clayton



Kentucky Power Company

REQUEST

Please provide the Company's total DSM costs for 2013.

RESPONSE

The total DSM costs include the following:

Direct Program Expense	\$ 2,601,951
Lost Revenue	\$ 897,456
Efficiency/Maximizing Incentive	\$ 401,331
All Other Company Expenses	\$ 280,854 (recovered through base rates, not DSM surcharge)
Total	\$ 4,181,592

WITNESS: E J Clayton



Kentucky Power Company

REQUEST

Please provide the estimated total DSM program costs in 2014 for each program, by the subcategories of "total program costs" provided on pages 4-24 of the DSM Status Report.

RESPONSE

Please see Attachment 1 to this response.

WITNESS: E J Clayton

Kentucky Power Company
Estimated DSM Program Costs
Calendar Year 2014

	Sum of First Half Year	Sum of Second Half Year	Forecast
Administrative			
Commercial			
Commercial Incentive	\$339,696.50	\$339,696.50	\$679,393.00
Commercial High Efficiency Heat Pump/Air Conditioning	\$300.00	\$450.00	\$750.00
Residential and Commercial HVAC Diagnostics and Tune-up	\$300.00	\$300.00	\$600.00
NEW General Administrative and Promotion Commercial	\$0.00	\$40,000.00	\$40,000.00
NEW School Energy Management	\$0.00	\$6,250.00	\$6,250.00
Commercial Total	\$340,296.50	\$386,696.50	\$726,993.00
Residential			
Residential Efficient Products	\$189,821.00	\$189,821.00	\$379,642.00
Mobile Home High Efficiency Heat Pump	\$5,000.00	\$6,000.00	\$11,000.00
Mobile Home New Construction	\$3,350.00	\$4,400.00	\$7,750.00
High Efficiency Heat Pump	\$15,100.00	\$14,650.00	\$29,750.00
Targeted Energy Efficiency	\$101,200.00	\$99,050.00	\$200,250.00
Modified Energy Fitness	\$396,582.75	\$398,172.26	\$794,755.00
Community Outreach Compact Fluorescent Lighting	\$219.30	\$280.70	\$500.00
Energy Education for Students	\$1,909.09	\$4,090.91	\$6,000.00
Residential and Commercial HVAC Diagnostics and Tune-up	\$3,000.00	\$3,000.00	\$6,000.00
NEW General Administrative and Promotion Residential	\$0.00	\$40,000.00	\$40,000.00
Residential Total	\$716,182.14	\$759,464.86	\$1,475,647.00
Administrative Total	\$1,056,478.64	\$1,146,161.36	\$2,202,640.00
Evaluation			
Commercial			
Commercial Incentive	\$59,445.00	\$0.00	\$59,445.00
Commercial High Efficiency Heat Pump/Air Conditioning	\$9,481.00	\$0.00	\$9,481.00
Residential and Commercial HVAC Diagnostics and Tune-up	\$9,361.00	\$0.00	\$9,361.00
Commercial Total	\$78,287.00	\$0.00	\$78,287.00
Residential			
Residential Efficient Products	\$27,744.00	\$0.00	\$27,744.00
Mobile Home High Efficiency Heat Pump	\$13,098.00	\$0.00	\$13,098.00
Mobile Home New Construction	\$12,372.00	\$0.00	\$12,372.00
High Efficiency Heat Pump	\$20,680.00	\$0.00	\$20,680.00
Targeted Energy Efficiency	\$20,641.00	\$0.00	\$20,641.00
Modified Energy Fitness	\$28,934.00	\$0.00	\$28,934.00
Community Outreach Compact Fluorescent Lighting	\$11,011.00	\$0.00	\$11,011.00
Energy Education for Students	\$9,713.00	\$0.00	\$9,713.00
Residential and Commercial HVAC Diagnostics and Tune-up	\$11,937.00	\$0.00	\$11,937.00
Residential Total	\$156,130.00	\$0.00	\$156,130.00
Evaluation Total	\$234,417.00	\$0.00	\$234,417.00

Incentive			
Commercial			
Commercial Incentive	\$337,500.00	\$337,500.00	\$675,000.00
Commercial High Efficiency Heat Pump/Air Conditioning	\$2,600.00	\$3,900.00	\$6,500.00
Residential and Commercial HVAC Diagnostics and Tune-up	\$360.00	\$360.00	\$720.00
Commercial Total	\$340,460.00	\$341,760.00	\$682,220.00
Residential			
Residential Efficient Products	\$212,277.00	\$212,277.00	\$424,554.00
Mobile Home High Efficiency Heat Pump	\$40,000.00	\$48,000.00	\$88,000.00
Mobile Home New Construction	\$33,500.00	\$44,000.00	\$77,500.00
High Efficiency Heat Pump	\$120,800.00	\$117,200.00	\$238,000.00
Targeted Energy Efficiency	\$0.00	\$0.00	\$0.00
Residential and Commercial HVAC Diagnostics and Tune-up	\$3,600.00	\$3,600.00	\$7,200.00
Residential Total	\$410,177.00	\$425,077.00	\$835,254.00
Incentive Total	\$750,637.00	\$766,837.00	\$1,517,474.00
Marketing			
Commercial			
Commercial Incentive	\$23,000.00	\$23,000.00	\$46,000.00
Commercial High Efficiency Heat Pump/Air Conditioning	\$400.00	\$600.00	\$1,000.00
Residential and Commercial HVAC Diagnostics and Tune-up	\$250.00	\$250.00	\$500.00
NEW General Administrative and Promotion Commercial	\$0.00	\$0.00	\$0.00
Commercial Total	\$23,650.00	\$23,850.00	\$47,500.00
Residential			
Residential Efficient Products	\$6,000.00	\$6,000.00	\$12,000.00
Mobile Home High Efficiency Heat Pump	\$909.09	\$1,090.91	\$2,000.00
Mobile Home New Construction	\$432.26	\$567.74	\$1,000.00
High Efficiency Heat Pump	\$3,809.73	\$3,690.27	\$7,500.00
Targeted Energy Efficiency	\$0.00	\$0.00	\$0.00
Modified Energy Fitness	\$7,475.00	\$7,525.00	\$15,000.00
Community Outreach Compact Fluorescent Lighting	\$877.20	\$1,122.80	\$2,000.00
Energy Education for Students	\$318.18	\$681.82	\$1,000.00
Residential and Commercial HVAC Diagnostics and Tune-up	\$600.00	\$600.00	\$1,200.00
NEW General Administrative and Promotion Residential	\$0.00	\$0.00	\$0.00
Residential Total	\$20,421.46	\$21,278.54	\$41,700.00
Marketing Total	\$44,071.46	\$45,128.54	\$89,200.00
Other			
Commercial			
Commercial Incentive	\$0.00	\$0.00	\$0.00
Commercial High Efficiency Heat Pump/Air Conditioning	\$0.00	\$0.00	\$0.00
Residential and Commercial HVAC Diagnostics and Tune-up	\$0.00	\$0.00	\$0.00
Commercial Total	\$0.00	\$0.00	\$0.00
Residential			
Residential Efficient Products	\$0.00	\$0.00	\$0.00
Mobile Home High Efficiency Heat Pump	\$0.00	\$0.00	\$0.00
Mobile Home New Construction	\$106.06	\$141.94	\$250.00
High Efficiency Heat Pump	\$0.00	\$0.00	\$0.00

Targeted Energy Efficiency	\$0.00	\$0.00	\$0.00
Modified Energy Fitness	\$0.00	\$0.00	\$0.00
Community Outreach Compact Fluorescent Lighting	\$0.00	\$0.00	\$0.00
Energy Education for Students	\$0.00	\$0.00	\$0.00
Residential and Commercial HVAC Diagnostics and Tune-up	\$0.00	\$0.00	\$0.00
Residential Total	\$108.06	\$141.94	\$250.00
Other Total	\$108.06	\$141.94	\$250.00
Equipment			
Residential			
Community Outreach Compact Fluorescent Lighting	\$22,807.20	\$29,192.80	\$52,000.00
Energy Education for Students	\$6,355.68	\$13,619.32	\$19,975.00
Residential Total	\$29,162.88	\$42,812.12	\$71,975.00
Equipment Total	\$29,162.88	\$42,812.12	\$71,975.00
Grand Total	\$2,114,875.04	\$2,001,080.96	\$4,115,956.00



Kentucky Power Company

REQUEST

For each of the last five years (2009-2013), please provide the Company's DSM energy savings as a percentage of the prior year's retail electricity sales.

RESPONSE

Please see Attachment I to this response.

WITNESS: E J Clayton

Kentucky Power Company
Impact Savings As a Percentage of Retail Sales¹
Years 2009 - 2013

	Impact Savings (kWh) <u>2013</u>	Impact Savings (kWh) <u>2012</u>	Impact Savings (kWh) <u>2011</u>	Impact Savings (kWh) <u>2010</u>	Impact Savings (kWh) <u>2009</u>
<u>Program - Residential</u>					
Targeted Energy Efficiency	123,059	297,500	263,978	455,844	320,260
Mobile Home High Efficiency Heat Pump	288,406	343,103	276,093	226,299	142,048
Mobile Home New Construction	128,943	155,055	138,956	221,335	192,229
Modified Energy Efficiency	468,609	472,218	446,511	551,073	430,530
High Efficiency Heat Pump	517,627	520,296	596,255	762,091	229,846
Community Outreach CFL	642,295	694,270	626,392	133,036	67,032
Energy Education for Students	208,233	202,694	195,610	20,698	14,117
HVAC Diagnostic and Tune-up - Residential	83,649	173,435	270,795	1,019	n/a
Residential Efficient Products	5,227,247	2,570,970	2,231,328	0	n/a
<u>Program - Commercial</u>					
HVAC Diagnostic and Tune-up - Commercial	11,883	38,944	76,302	225	n/a
Small Commercial Heat Pump/Air Conditioner	7,048	11,464	14,938	0	n/a
Commercial Incentive	1,658,662	542,952	21,083	0	n/a
Total	9,365,661	6,022,901	5,158,241	2,371,620	1,396,062
Retail Electric Sales - kWh (Residential, Commercial, Industrial, and Street Lighting)	6,537,520,366	6,660,656,343	6,983,162,838	7,348,528,993	7,068,455,631
Percentage of DSM Energy Savings - %	0.14%	0.09%	0.07%	0.03%	0.02%

1. Impact Savings as reported for the DSM Status Reports



Kentucky Power Company

REQUEST

Referring to page 1 of the DSM Status Report, please explain why the Company calculates the number of participating customers as equal to one half of the new participants for the current month, plus cumulative participants from the previous months.

RESPONSE

It is a reporting methodology applied during the early development of DSM programs for Kentucky Power. The Company is currently evaluating the Portfolio of DSM programs and will compare the total impact savings determined from the final 2014 program evaluations with the present method for reporting impact savings as used with the DSM Status Reports, to determine if adjustments in reporting are appropriate.

WITNESS: E J Clayton



Kentucky Power Company

REQUEST

Referring to the Company's decision to increase its DSM spending under the Commission's October 7, 2013 order in Case No. 2012-00578 by expanding the participation goals for the Modified Energy Fitness, Residential Efficiency Products and Commercial Incentive programs (see page 3 of the Company's letter):

- a. Please explain what role, if any, the Collaborative played in the Company's decision-making process.
- b. Please provide all analyses, workpapers and any other documents that informed and/or support the Company's decision as to how to allocate the increased spending.

RESPONSE

- a. The Collaborative reviews and provides comments on all the program filings and subsequent program evaluations before applications or reports are submitted to the Kentucky Public Service Commission (PSC). Any changes to DSM programs are addressed with the Collaborative before filing with the Commission. Updates to program participation levels and/or budgets are reviewed at Collaborative meetings before filing with the Commission. A Collaborative meeting was held on September 26, 2013 where the DSM Status Report was presented.

Based on the increased DSM spending approved by the Order Dated October 7, 2013 in Case No. Case 2012-00578, a modified DSM Status Report and Exhibit C were issued to Collaborative members on December 10, 2013 by email. The email summarized program changes, and a separate document was included as attachment to summarize the line item revisions between the proposed Status Report and the Status Report and Exhibit C information reviewed on September 26, 2013. A conference call was held on December 16, 2013 during which the proposed Status Report was reviewed. There were no objections from participating members (the KY Attorney General representative abstained by email notification).

Minutes of the conference call were issued by email on December 16, 2013.

- b. Prior to allocating the increased spending, the Company consulted with the vendors implementing its current programs. These vendors provided proposals to the Company outlining how they could expand those current programs. These proposals are attached. Kentucky Power is seeking confidential treatment for portions of these attachments. Based on these proposals, Kentucky Power entered into revised contracts with the vendors allocating the additional spending among the three programs. Please see the confidential attachments to the Company's response to KPSC 1-8c, 1-13c, and 1-16c.

WITNESS: E J Clayton

HIGH LEVEL BUDGET SUMMARY
AEP Kentucky - Lighting Program
 January 1, 2014 - December 31, 2016

1

Cost Elements	Product Quantity				Avg Incentive Levels			Total Budget			Total 3 Year Program Budget
	2014	2015	2016	Total Program	2014	2015	2016	2014	2015	2016	
	Product Quantity	Product Quantity	Product Quantity	Product Quantity	Incentive Per Product	Incentive Per Product	Incentive Per Product	Total Costs	Total Costs	Total Costs	
Product Incentives											
CFLs											
Standard CFLs	240,000	240,000	240,000	720,000							
Specialty CFLs	20,000	20,000	0	40,000							
Total Retail Based CFLs	260,000	260,000	240,000	760,000							
LEDs											
Standard LEDs	4,500	9,000	20,000	33,500							
Specialty LEDs	0	0	0	0							
Total Retail Based LEDs	4,500	9,000	20,000	33,500							
Total Retail Based CFLs & LEDs	264,500	269,000	260,000	793,500							
Miscellaneous Bulk Distribution											
Community Events 23W 4pk (cost per bulb)	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0	\$0
Community Based Bulk Distribution											
Food Bank CFL Distribution 23W 4PK (cost per bulb)	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0	\$0
Fixtures											
LED Fixtures	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0	\$0
LED Holiday Lights											
LED Holiday Light Strips	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0	\$0
Total Lighting	264,500	269,000	260,000	793,500							
Non-Lighting Products											
Room Air Conditioners	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0	\$0
Clothes Washers	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0	\$0
Dishwashers	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0	\$0
Refrigerators	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0	\$0
Freezers	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0	\$0
Heat Pump Water Heaters	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0	\$0
Total Non-Lighting Products	0	0	0	0	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0	\$0
Total Product Incentives	264,500	269,000	260,000	793,500							

NON-INCENTIVE BUDGET	
APT Field Implementation	
EPI Incentive Processing	
Miscellaneous	
Total Non-Incentive Budget	
Grand Total Budget Including Product Incentives	

Key Statistics:

- Allocation of Dollars
- Total Savings
- Cost of Conserved Energy

	2014	2015	2016	Total
Incentive Percentage	52%	53%	52%	53%
Non-Incentive Percentage	48%	47%	48%	47%

	2014	2015	2016	Total
Total Annual Savings Gross MWh				
Total Demand Savings MW				

	2014	2015	2016	Total
Total Annual Cost Per kWh (Gross)	\$0.0788	\$0.0843	\$0.0878	\$0.0835

KPSC Case No. 2013-00487
 Sierra Club's Initial Data Request
 Order Dated January 31, 2014
 Item No. 8
 Attachment 1
 Page 1 of 4
 REDACTED

2

Total Budget Summary
AEP Kentucky - Lighting Program
January 1, 2014 - December 31, 2016

Cost Elements	2014		2015		2016		2017		2018		2019		2020		Total
	Product Quantity	Unit Price	Product Quantity	Unit Price	Product Quantity	Unit Price	Product Quantity	Unit Price	Product Quantity	Unit Price	Product Quantity	Unit Price	Product Quantity	Unit Price	
Product Enclosures															
Standard CFL	240,000	78.00	240,000	78.00	240,000	78.00	240,000	78.00	240,000	78.00	240,000	78.00	240,000	78.00	2,400,000
Standard CFL	20,000	45.00	20,000	45.00	20,000	45.00	20,000	45.00	20,000	45.00	20,000	45.00	20,000	45.00	200,000
Total Standard CFLs	260,000		260,000		260,000		260,000		260,000		260,000		260,000		2,600,000
LEDs	4,000	8.00	4,000	8.00	4,000	8.00	4,000	8.00	4,000	8.00	4,000	8.00	4,000	8.00	40,000
Standard LEDs	4,000	8.00	4,000	8.00	4,000	8.00	4,000	8.00	4,000	8.00	4,000	8.00	4,000	8.00	40,000
Total Standard LEDs	4,000		4,000		4,000		4,000		4,000		4,000		4,000		40,000
Total Standard CFLs & LEDs	264,000		264,000		264,000		264,000		264,000		264,000		264,000		2,640,000
Community Events 250W 4pk Used per bulb															
Field Staff CFL Distribution 250W 4pk (cost per bulb)															
LED Fixtures															
LED Valley Light Straps	24,000	793.00	24,000	793.00	24,000	793.00	24,000	793.00	24,000	793.00	24,000	793.00	24,000	793.00	240,000
Total Lighting	24,000		24,000		24,000		24,000		24,000		24,000		24,000		240,000
Non-lighting Products															
New Air Conditioners															
Custom Windows															
Decorations															
Highways															
Posters															
Post Poles Water Heaters															
Total Non-lighting	0		0		0		0		0		0		0		0
Total Product Inventory	288,000		288,000		288,000		288,000		288,000		288,000		288,000		2,880,000
Total Inventory Procurement Budget	288,000		288,000		288,000		288,000		288,000		288,000		288,000		2,880,000
Total Inventory Procurement Budget	288,000		288,000		288,000		288,000		288,000		288,000		288,000		2,880,000
AEP Program Field Implementation Budget															
Field Staff	24,000	58,000	24,000	58,000	24,000	58,000	24,000	58,000	24,000	58,000	24,000	58,000	24,000	58,000	240,000
Field Staff Labor															
Administration & Management Fee															
Total Labor	24,000		24,000		24,000		24,000		24,000		24,000		24,000		240,000
General Program Expenses															
Marketing Materials															
Office Supplies															
Travel															
Printing															
Telephone															
Utilities															
Transportation															
Other															
Total General Program Expenses	0		0		0		0		0		0		0		0
Total Field Implementation Budget	24,000		24,000		24,000		24,000		24,000		24,000		24,000		240,000
Total Field Implementation Budget	24,000		24,000		24,000		24,000		24,000		24,000		24,000		240,000
Total Budget Summary	312,000		312,000		312,000		312,000		312,000		312,000		312,000		3,120,000

Continued

AEP Program

**Total Product Summary
AEP Kentucky - Lighting Program
January 1, 2014 - December 31, 2016**

Cost Elements	Total Product Quantity				Total All Years	Average Incentive Levels				Total Budget			Total 3 Year Program Budget	
	2014		2015			2016		2014		2015		2016		
	Product Quantity	Product Quantity	Product Quantity	Product Quantity		Incentive Per Product	Incentive Per Product	Incentive Per Product	Total Costs	Total Costs	Total Costs	Total Costs		Total Costs
CFLs														
Standard CFLs	240,000	240,000	240,000	240,000	720,000									
Specialty CFLs	20,000	20,000	0	0	40,000									
Total Retail Based CFLs	260,000	260,000	240,000	240,000	760,000									
LEDs														
Standard LEDs	4,500	0,000	20,000	20,000	33,500									
Specialty LEDs	0	0	0	0	0									
Total Retail Based LEDs	4,500	0,000	20,000	20,000	33,500									
Miscellaneous Bulb Distribution														
CFLs	0	0	0	0	0									
Community Events 23W 4pk (cost per bulb)	0	0	0	0	0									
Total Miscellaneous CFL Distribution	0	0	0	0	0									
Community Based Bulb Distribution														
CFLs	0	0	0	0	0									
Food Bank CFL Distribution 23W 4PK (cost per bulb)	0	0	0	0	0									
Total Community Based CFL Distribution	0	0	0	0	0									
Fixtures														
LED Fixtures	0	0	0	0	0									
Total Fixtures	0	0	0	0	0									
LED Holiday Lights														
LED Holiday Light Strings	0	0	0	0	0									
Total LED Holiday Lights	0	0	0	0	0									
Non-Lighting Products														
Room Air Conditioners	0	0	0	0	0									
Chimes Washers	0	0	0	0	0									
Dehumidifiers	0	0	0	0	0									
Refrigerators	0	0	0	0	0									
Freezers	0	0	0	0	0									
Heat Pump Water Heaters	0	0	0	0	0									
Total Non Lighting	0	0	0	0	0									
Total All Products	264,500	280,000	260,000	260,000	794,500									

2014	2015	2016	Total	2014	2015	2016	Total	2014	2015	2016	Total	2014	2015	2016	Total
264,500	280,000	260,000	794,500	0	0	0	0	0	0	0	0	0	0	0	0

**Annual Energy Savings Summary
AEP Kentucky - Lighting Program
January 1, 2014 - December 31, 2016**

4

Measure	2014			2015			2016			TOTALS		
	Annual kWh Savings/Unit	Product Quantity	Total Annual Gross kWh Savings	Annual kWh Savings/Unit	Product Quantity	Total Annual Gross kWh Savings	Annual kWh Savings/Unit	Product Quantity	Total Annual Gross kWh Savings	Average Annual kWh Savings/Unit	Total Product Quantity	Total Annual Gross kWh Savings
Standard CFLs		240,000			240,000			240,000			720,000	
Specialty CFLs		20,000			20,000			20,000			40,000	
Standard LEDs		4,500			9,000			20,000			33,500	
Specialty LEDs		0			0			0			0	
Community Events 23W 4pk (cost per bulb)		0			0			0			0	
Food Bank CFL Distribution 23W 4pk (cost per bulb)		0			0			0			0	
LED Fixtures		0			0			0			0	
LED Holiday Light Strings		0			0			0			0	
Lighting Sub Total		264,500			250,000			260,000			783,500	
Room Air Conditioners		0			0			0			0	
Clothes Washers		0			0			0			0	
Dehumidifiers		0			0			0			0	
Refrigerators		0			0			0			0	
Freezers		0			0			0			0	
Wet Pump Water Heaters		0			0			0			0	
Appliance Sub Total		0			0			0			0	
ANNUAL SAVINGS TOTALS		264,500			250,000			260,000			783,500	

Confidential

APT Proposal

SECOND AMENDMENT TO CONTRACT NO. 382707X110

This Second Amendment to Contract No. 382707X110 ("Second Amendment") executed to be effective as of the 1st day of January, 2014 ("Second Amendment Effective Date"), is entered into by and between **Kentucky Power Company**, a Kentucky corporation ("Owner" or "KPCO") and **Kema Services, Inc.**, a Massachusetts corporation ("Consultant" or "DNV Kema").

WHEREAS, Consultant and Owner entered into Contract No. 382707X110 ("Contract") with Effective Date of February 1, 2011 whereby Contractor is to perform certain Services as defined in the Contract.

WHEREAS, Consultant and Owner desire to modify the terms and conditions of the Contract as set forth below.

NOW THEREFORE, the Parties hereto, hereby agree as follows:

1. In Exhibit B to the Contract, amend the Goal Projections by year – Base Range table on page 2 to increase the Target customers to 250 for 2014 and 2015.
2. In Exhibit B to the Contract, amend the Goal Projections by year – Base Range table on page 2 to increase the Annual Energy (MWh) Reduction to 6250 for 2014 and 2015.
3. In Exhibit B to the Contract, amend the 2014 & 2015 Goal projections by Program Element on page 3 by deleting the number of Target Participants for each Program Element and replacing with the following:

Pres/ Cust.	187
New Const.	4
DI	59
Total	250

4. In Exhibit B to the Contract, amend the 2014 & 2015 Goal projections by Program Element on page 3 by deleting the number for Annual Energy (MWh) Reduction for each Program Element and replacing with the following:

Pres/ Cust.	[REDACTED]
New Const.	[REDACTED]
DI	[REDACTED]
Total	[REDACTED]

5. In Exhibit C to the Contract, incorporate the attached 2014 and 2015 budgets ("New 2014/2015 Budget") replacing all references to a 2014 / 2015 budget currently in Exhibit C ("Old 2014 / 2015 Budget") to be effective as of the Second Amendment Effective Date.
6. Except as amended by this Second Amendment, all provisions, terms and conditions of the Contract shall remain in full force and effect.

IN WITNESS WHEREOF, the Parties hereto have caused this Second Amendment to be signed by their respective representatives thereunto duly authorized on the dates set forth below to be effective as of the Second Amendment Effective Date.

Kentucky Power Company

Kema Services, Inc.

Gregory Pauley
President & COO

Name:
Title:

date

date

2014

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Budget/Goal
Incentives Paid	\$27,000.00	\$27,000.00	\$40,500.00	\$40,500.00	\$40,500.00	\$40,500.00	\$40,500.00	\$40,500.00	\$81,000.00	\$81,000.00	\$108,000.00	\$108,000.00	\$675,000.00
New Construction	CI	8	8	11	11	11	11	11	22	22	31	30	187
	DI	2	2	3	4	4	3	4	7	8	9	9	59
Number of Apps Paid	10	10	15	15	15	15	15	15	30	30	40	40	250
MWH Paid	250.00	250.00	375.00	375.00	375.00	375.00	375.00	375.00	750.00	750.00	1000.00	1000.00	6250.00

Assumptions:
 [REDACTED]
 4 direct mail pieces
 [REDACTED]
 25 MWH per application

2015

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Budget/Goal
Incentives Paid	\$27,000.00	\$27,000.00	\$40,500.00	\$40,500.00	\$40,500.00	\$40,500.00	\$40,500.00	\$40,500.00	\$81,000.00	\$81,000.00	\$108,000.00	\$108,000.00	\$675,000.00
New Construction													
CI	8	8	11	11	11	11	11	11	22	22	31	30	187
DI	2	2	3	4	4	3	4	4	7	8	9	9	59
Number of Apps Paid	10	10	15	15	15	15	15	15	30	30	40	40	250
MWH Paid	250.00	250.00	375.00	375.00	375.00	375.00	375.00	375.00	750.00	750.00	1000.00	1000.00	6250.00

Assumptions:
 [REDACTED]
 4 direct mail pieces
 [REDACTED]
 25 MWH per application

ELEVENTH AMENDMENT TO SERVICE AGREEMENT NO. 714188X110

This Eleventh Amendment to Service Agreement No. 714188X110 ("Eleventh Amendment") executed to be effective as of the 31st day of December, 2013 ("Eleventh Amendment Effective Date"), is entered into by and between Kentucky Power Company ("Owner" or "AEP") and Honeywell International, Inc. ("Contractor").

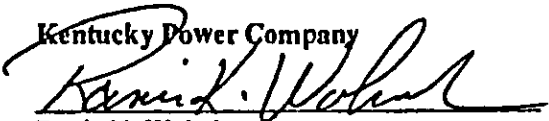
WHEREAS, Contractor and Owner entered into Service Agreement No. 714188X110 (together with the amendments, the "Agreement") dated December 18, 2002, whereby Contractor is to provide certain Work as defined in the Agreement.

WHEREAS, Contractor and Owner desire to modify the terms and conditions of the Agreement as set forth below.

NOW THEREFORE, the parties hereto, hereby agree as follows:

1. The term of this Agreement is extended through December 31, 2014.
2. For 2014 there will be a Standard Offering consisting of [REDACTED] customer audits and an Extended Offering, which, upon written approval by Owner, increase the number of customer audits to [REDACTED]. Pricing for the Standard Offering and the Extended Offering shall be in accordance with Exhibit B.
3. Modify Exhibit B of the Agreement by deleting the Honeywell Utility Solutions Price Sheet dated December 23, 2011 ("Old Rates") and replacing with the attached Honeywell Utility Solutions Price Sheet ("New Rates") which are incorporated herein and shall be effective as of the Eleventh Amendment Effective Date.
4. Except as amended by this Eleventh Amendment, all provisions, terms and conditions of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused this Eleventh Amendment to be signed by their respective representatives thereunto duly authorized on the dates set forth below to be effective as of the Eleventh Amendment Effective Date.

Kentucky Power Company

Ranie K. Wornhas
Managing Director Regulatory & Finance

1/2/14
date

Honeywell International, Inc.


Name: Stan VanDemoot
Title: Senior Contracts Manager

December 18, 2013
date

Honeywell Utility Solutions Price Sheet
Exhibit B

DESCRIPTION	MEASURE	COST	STANDARD OFFERING	EXTENDED OFFERING
			1200	800
operations	MONTHLY IT FEE	██████	██████	██████
admin	AUDIT SERVICES	██████	██████	██████
admin	BLOWER DOOR TEST	██████	██████	██████
admin	BLOWER DOOR TEST (Pre and Post)	██████	██████	██████
material	CAN FOAM (12.oz)	██████	██████	██████
material	CAULK (PER LNR FT)	██████	██████	██████
material	CFL 27 WATT	██████	██████	██████
material	CFL 23 WATT	██████	██████	██████
material	CFL 19 WATT	██████	██████	██████
material	CFL 14 WATT	██████	██████	██████
material	CFL 13 WATT	██████	██████	██████
material	CFL 3-WAY	██████	██████	██████
material	23W R-40 FLOOD	██████	██████	██████
material	16W R-30 FLOOD	██████	██████	██████
material	NEON NIGHT LIGHT	██████	██████	██████
material	DOOR SWEEP	██████	██████	██████
material	DUCT SEALING - ALUM GRIP TAPE	██████	██████	██████
material	DUCT SEALING - ALUM TAPE	██████	██████	██████
educ	EDUCATION BOOKLET	██████	██████	██████
material	DHW PIPE INSULATION- 1/2"	██████	██████	██████
material	DHW PIPE INSULATION- 3/4"	██████	██████	██████
material	SHOWERHEAD	██████	██████	██████
admin	PROGRAM ADMINISTRATION	██████	██████	██████
marketing	PROMOTION FEE	██████	██████	██████
material	SWITCH AND OUTLET GASKETS	██████	██████	██████
material	DHW TANK WRAP	██████	██████	██████
material	WEATHERSTRIP (PER LNR FT)	██████	██████	██████

Honeywell Utility Solutions Price Sheet

Exhibit B

Please note that Honeywell's pricing is the total, maximum, not-to-exceed authorized by AEP for the 2014 program year. Any potential conditions that would increase the cost or risk associated with the contract shall not be increased except by an executed written amendment by each parties authorized representative. Based on the volume desired and frequencies seen in the program's history, our pricing reflects a not to exceed value of [REDACTED]. This would align with the average audit fee per home of [REDACTED]. The target expense for 2014 for 2000 audits would be [REDACTED] plus the IT fee and tax expense

[REDACTED]

ORIGINAL NUMBER OF CUSTOMERS 1200
 EXTENDED CUSTOMERS 800

COST



description MEASURE

- operations MONTHLY IT FEE
- admin AUDIT SERVICES
- admin BLOWER DOOR TEST
- material CAN FOAM (12.00)
- material CAULK (PER LINR FT)
- material CFL 27 WATT
- material CFL 23 WATT
- material CFL 19 WATT
- material CFL 14 WATT
- material CFL 13 WATT
- material CFL 3-WAY
- material 23W R-40 FLOOD
- material 16W R-30 FLOOD
- material NEON NIGHT LIGHT
- material DOOR SWEEP
- material DUCT SEALING - ALUM GRIP TAPE
- material DUCT SEALING - ALUM TAPE
- educ EDUCATION BOOKLET
- material DHW PIPE INSULATION- 1/2"
- material DHW PIPE INSULATION- 3/4"
- material SHOWERHEAD
- admin PROGRAM ADMINISTRATION
- marketing PROMOTION FEE
- material SWITCH AND OUTLET GASKETS
- material DHW TANK WRAP
- material WEATHERSTRIP (PER LINR FT)


2014 Customer Average Charge		Partial allocation		TOTAL	
fixed IT expense	1300	1200	800	2000	1200
customers	2000				
admin					
educ					
marketing					
material					
tax					
IT					
Total					

Notes to Pricing



HONEYWELL SMART GRID SOLUTIONS
 Submitted November 14, 2013

American Electric Power

<u>Description</u>	<u>Price Per Unit</u>
MONTHLY IT FEE	
AUDIT SERVICES	
BLOWER DOOR TEST	
BLOWER DOOR TEST (Pre and Post)	
CAN FOAM (12 oz)	
CAULK (PER LINR FT)	
CFL 27 WATT	
CFL 23 WATT	
CFL 19 WATT	
CFL 14 WATT	
CFL 13 WATT	
CFL 3-WAY	
23W R-40 FLOOD	
16W R-30 FLOOD	
NEON NIGHT LIGHT	
DOOR SWEEP	
DUCT SEALING - ALUM GRIP TAPE	
DUCT SEALING - ALUM TAPE	
EDUCATION BOOKLET	
DI IW PIPE INSULATION- 1/2"	
DI IW PIPE INSULATION- 3/4"	
SHOWERHEAD	
PROGRAM ADMINISTRATION	
PROMOTION FEE	
SWITCH AND OUTLET GASKETS	
DI IW TANK WRAP	
WEATHERSTRIP (PER LINR FT)	
PROGRAMMABLE THERMOSTAT (MODEL TH6110D1005)	

Notes to Pricing

- 1) Payment shall be made on net 10-day terms, billed monthly
- 2) Labor shall be non-union and non-prevailing wage
- 3) Licenses and/or permits shall not be required to perform the work
- 4) Pricing is based on AEP providing the customer leads database to Honeywell in a timely manner
- 5) Above pricing does not include sales tax which will be invoiced separately

From: McGrath, Robert <Robert.McGrath@honeywell.com>
Sent: Thursday, November 14, 2013 4:56 PM
To: E Clayton; Kenneth L Borders
Cc: Jennifer L Downey; Meisenhelder, Richard; McMahon, Tom (NJ09)
Subject: RE: Honeywell Follow Up

This is an EXTERNAL email. STOP. THINK before you CLICK links or DPEN attachments.

.....

EJ

The target expense for 2014 for [REDACTED] would be [REDACTED] plus the IT fee and tax expense. There would be additional charges based on the volume of thermostats installed.

Bob McGrath
Northeast Sales Leader
Honeywell Building Solutions
Smart Grid Solutions
199 Rosewood Ave
Danvers, MA 01923
603 670 8440

-----Original Message-----

From: E Clayton [mailto:ejclayton@aep.com]
Sent: Thursday, November 14, 2013 4:15 PM
To: McGrath, Robert; Kenneth L Borders
Cc: Jennifer L Downey; Meisenhelder, Richard; McMahon, Tom (NJ09)
Subject: RE: Honeywell Follow Up

Thanks Bob.

So the target expense for 2014 would be [REDACTED] based on the average household expense plus the monthly IT fee and the tax expense? Can you verify?

E. J. Clayton
Manager EE and Consumer Programs
606-929-1693 Office
606-585-8693 Mobile

-----Original Message-----

From: McGrath, Robert [mailto:Robert.McGrath@honeywell.com]
Sent: Thursday, November 14, 2013 3:35 PM
To: E Clayton; Kenneth L Borders

Cc: Jennifer L Downey; Meisenhelder, Richard; McMahon, Tom (NJ09)
Subject: RE: Honeywell Follow Up

This is an EXTERNAL email. STOP. THINK before you CLICK links or OPEN attachments.

Hi EJ-

I hope this helps clarify your questions -

The target per household remains the same as the first iteration we presented in October. [REDACTED] Also, this pricing was the pricing given back in October, it applies from [REDACTED]

I am, working on clarification regarding your tax question and will hope to have a response back shortly.

Bob
Bob McGrath
Northeast Sales Leader
Honeywell Building Solutions
Smart Grid Solutions
199 Rosewood Ave
Danvers, MA 01923
603 670 8440

-----Original Message-----

From: E Clayton [mailto:ejclayton@aep.com]
Sent: Thursday, November 14, 2013 12:28 PM
To: McGrath, Robert; Kenneth L Borders
Cc: Jennifer L Downey; Meisenhelder, Richard; McMahon, Tom (NJ09)
Subject: RE: Honeywell Follow Up

Thanks Bob, this information is very helpful.

For clarification, is the pricing applicable to all [REDACTED] households receiving the service or just the incremental quantity above the existing contract pricing we for [REDACTED] It would be helpful if you could provide a total forecast expense based on the target number of households.

Also, do you have a target average expense per household.

I notice the sales tax is a separate item to be invoiced independent of other charges. This represents a change from our current contract pricing. Can you describe how this will be expensed?

E. J. Clayton
Manager EE and Consumer Programs
606-929-1693 Office
606-585-8693 Mobile

-----Original Message-----

From: McGrath, Robert [mailto:Robert.McGrath@honeywell.com]

Sent: Thursday, November 14, 2013 12:09 PM
To: Kenneth L Borders
Cc: Jennifer L Downey; E Clayton; Meisenhelder, Richard; McMahon, Tom (NJ09)
Subject: RE: Honeywell Follow Up

This is an EXTERNAL email. STOP. THINK before you CLICK links or OPEN attachments.

.....
Good afternoon-

Please find attached Honeywell's updated pricing that reflects the standard offering and the extended offering stated below. Honeywell is able to maintain the per customer price that was quoted on October 16th.

We have also included pricing for installation of programmable thermostats. However we do not believe that this is a cost effective measure for the program. It requires multiple site visits and does not have the energy savings to justify the cost. We have included the pricing for your review and would be open to discussing in greater detail once you have had a chance to review.

Finally for the pre and post audit - Honeywell is providing a budgetary estimate [REDACTED] We anticipate the inspection taking 1 hour to complete. We would appreciate further conversation about this to confirm volumes.

Please let me know if you have any questions or if I my of assistance in any way.

Thank you for the opportunity to continue to work with your team.

Bob

Bob McGrath
Northeast Sales Leader
Honeywell Building Solutions
Smart Grid Solutions
199 Rosewood Ave
Danvers, MA 01923
603 670 8440

-----Original Message-----

From: Kenneth L Borders [mailto:klborders@aep.com]
Sent: Tuesday, November 12, 2013 10:06 AM
To: McGrath, Robert
Cc: Jennifer L Downey; E Clayton
Subject: FW: Honeywell Follow Up

Bob thanks for calling me yesterday and discussing. I discussed this with E. J. Clayton, and he indicated that we still want to have available to us a price for the "standard offering" for the Modified Energy Fitness Program , that is [REDACTED] customer [REDACTED] that is presently being conducted, as well as the "extended offering" which is the [REDACTED] that are now being proposed. I am assuming that the budgetary price for the "standard offering" is the price you provided in your memo to me on October 16th, with a per customer price of [REDACTED] with a total price not to exceed

██████████ We would want the "extended offer" pricing to be in the same format so we can determine the differential pricing.

So, going forward, we want to have "Plan A" pricing available, which is the standard ██████████ and the budgetary price for that program and "Plan B" ██████████ pricing available. We expect that we will be going with the "Plan B", ██████████ but if something changes with our agreement with the KY PSC, we want to have the "Plan A" program ready to go for 2014 if needed.

Hope this is clear, if not call me on my cell phone at 606/571-3758, because I will be leaving here around noon today.

Thanks,
Ken Borders - Coordinator for Demand Side Management Programs AEP - Kentucky Power Company
12333 Kevin Avenue
Ashland, KY 41102
Telephone - (606) 929-1696
AEP AUDINET 600-1696

-----Original Message-----

From: Kenneth L Borders
Sent: Monday, November 11, 2013 4:58 PM
To: Bob McGrath (Robert.McGrath@honeywell.com); Meisenhelder, Richard
Cc: E Clayton; Jennifer L Downey (jdowney@aep.com)
Subject: FW: Honeywell Follow Up

Bob, Richard:

We need budgetary numbers for the items I wrote you on Friday (memo attached below). If possible, we would like some comment on this tomorrow before noon. If not, please provide a response to me and a copy to E J Clayton (ejclayton@aep.com) by Thursday, November 14. I will be away from the office from noon Tuesday until the end of the week. I will be responding to emails but only periodically. If you have questions that need addressed, please call E.J. at (606) 929-1693 after noon tomorrow...thanks, Ken.

Ken Borders - Coordinator for Demand Side Management Programs AEP - Kentucky Power Company
12333 Kevin Avenue
Ashland, KY 41102
Telephone - (606) 929-1696
AEP AUDINET 600-1696

-----Original Message-----

From: Kenneth L Borders
Sent: Friday, November 08, 2013 10:53 AM
To: 'McGrath, Robert'; Meisenhelder, Richard
Cc: E Clayton
Subject: RE: Honeywell Follow Up

Bob:

Thanks for the information, which helps us with planning. We need to take this further, though and we need Honeywell to consider what we will agree to in a contract 2014. So, I will need some budgetary numbers for pricing. I am assuming that the "per customer not to exceed" price for 2014 is still valid. So, please confirm or update pricing for 2014 for the KPCO modified energy fitness program. We will plan to pursue your estimate ██████████ Honeywell's goal for 2014, but

we need to be sure that your present proposed "per customer" pricing is still valid. Please respond ASAP so we can begin to prepare for a new contract amendment. This takes some time, so we need to move on this now.

Also, we had asked about the possibility of re-inclusion of programmable thermostats for 2014. Is there no cost effective way to offer this program? If not, what is the factor that keeps us from offering the thermostat? Please indicate whether Honeywell will offer this in 2014 and provide a budgetary figure. We realize this may affect the "per customer" pricing as referenced above. So, Honeywell would need to provide the additional cost that would be necessary to implement this measure, if it is feasible for you to offer. Again, if we are going to offer in 2014, then we need to be moving now to get our contract language prepared and ready for the beginning of 2014.

Finally, we are interested in budgetary pricing for Honeywell to offer pre/post audit services for customers that have insulation installed (either on a do-it-yourself basis or contractor installed). This would NOT be a part of the Modified Energy Fitness program and would require KPCO to file as a new program with the KY PSC. So, we would not be able to offer this program at the beginning of 2014. We would want to have some idea of pricing before proceeding with a filing, so we would appreciate a budgetary number for this service.

Ken Borders - Coordinator for Demand Side Management Programs AEP - Kentucky Power Company
12333 Kevin Avenue
Ashland, KY 41102
Telephone - (606) 929-1696
AEP AUDINET 600-1696

-----Original Message-----

From: McGrath, Robert [mailto:Robert.McGrath@honeywell.com]
Sent: Friday, November 08, 2013 10:06 AM
To: Kenneth L Borders
Subject: Fw: Honeywell Follow Up

This is an EXTERNAL email. STOP. THINK before you CLICK links or OPEN attachments.

Please confirm that you received this.

----- Original Message -----

From: McGrath, Robert
Sent: Thursday, November 07, 2013 09:37 AM Eastern Standard Time
To: Kenneth L Borders <klborders@aep.com>
Subject: Honeywell Follow Up

Hi Ken-

We have done a high level review of the available market for Kentucky Power and are very comfortable increasing the number of audits to [REDACTED]. We do think there is additional potential - and can see a [REDACTED] the program year.

We have come to this conclusion based on the numbers of audits we completed over the years as well as the available market.

Honeywell is prepared to reach these goals and will take the necessary operational steps to ensure that we continue provide the highest level of service to Kentucky Power and its customers.

Please let me know if you need anything additional

Bob

Bob McGrath
Northeast Sales Leader
Honeywell Building Solutions
Smart Grid Solutions
199 Rosewood Ave
Danvers, MA 01923
603 670 8440



Kentucky Power Company

REQUEST

Page 3 of the Company's letter states that the Commercial Incentive program's participation goal increased in 2014 from 225 to 250 customers. Page 20 of the Status Report provides a 2013 participation forecast of 150 customers for this program. Is the Company projecting to have 75 fewer customers participate in the Commercial Incentive program in 2013 than the number of customers set out in its participation goal? If not, please explain this discrepancy between the 2013 projection and participation goal.

RESPONSE

No. The reduction in projected participants was from 200 to 150.

WITNESS: E J Clayton



Kentucky Power Company

REQUEST

Please identify and produce any DSM market potential studies performed by or for KPC in the last five years, including attendant workbooks or calculations in electronic and machine readable format.

RESPONSE

No market potential studies were performed in the last five years.

WITNESS: E J Clayton



Kentucky Power Company

REQUEST

Regarding the Company's proposed DSM Market Potential Study:

- a. Please identify the person(s)/firm(s) who will conduct the study.
- b. Please provide any scope of work and/or request for proposals for the study.
- c. Please provide the estimated start and competition dates of the study.
- d. Please describe the purpose of the study.
- e. Please state whether the study will inform future DSM spending by the Company.

RESPONSE

- a. A company or vendor of these services has not been confirmed.
- b. Please see Attachment 1 to this response. Confidential treatment is being sought for portions of this attachment.
- c. A study start date has not been identified; however, a tentative start date is anticipated for July or August with total duration to complete the study estimated at 20 to 24 weeks.
- d. The purpose of the study is to help the Company develop a long-term strategy and plan for implementing cost-effective DSM programs.
- e. Yes, the study will review all customer sectors within the Company service territory to access the market potential for implementing cost-effective DSM programs.

WITNESS: E J Clayton



November 7, 2013

Mr. EJ Clayton **via email**
Kentucky Power Company

Dear EJ:

Applied Energy Group, Inc., (AEG) is pleased to provide a proposal to Kentucky Power Company (KPCO or Company) to provide an energy efficiency plan including (a) conducting a comprehensive electric energy efficiency market potential study, and (b) developing program designs to support the Company's requirements under Commonwealth of Kentucky Public Service Commission's order in case 2012-00578.

In its Order, the PSC indicates that in aggregate, the Company's DSM program budget will increase to \$4M in 2014; \$5M in 2015 and \$6M for 2016-2018. Given this significant commitment, we agree that it is prudent that KPCO undertake a market potential study as the first step in the process to ensure cost effective program designs to meet these spending requirements.

As we discussed, there are several approaches to conducting market potential studies; some of which can be quite costly – especially if primary data is collected from representative segments of the population served by KPCO. Further, even with costly primary data collection, there is frequently a gap between the information in market potential studies and that which is needed to develop actionable energy efficiency strategies. Through AEG's work with multiple utilities throughout the country, we have learned how to customize our work product to expand the market potential study (while maintaining costs) by:

- Incorporating historic and current DSM programming data. This is especially true for KPCO given our past and current evaluation work.
- Pairing utility specific data with potential studies' findings. Having historical and forecasted usage by rate class provides a proxy for developing baseline data when combined with data that we can derive from secondary data sources.
- Developing improved customer segmentation. Combining our evaluation work, Company specific usage by customer or rate class and use of secondary data sources allows us to target measures to specific DSM initiatives.

Our market potential analysis will result in a defensible study which provides KPCO with aggregate data to inform program strategy and resource deployment, use KPCO data (at a fairly granular level) for tactical planning and implementation, discern differences between customer segments and deploy unique marketing techniques required for each, and better defend DSM budgets and targets to internal and external stakeholders. AEG's on-going work in the DSM planning arena has resulted in opportunities to enhance our study output analytics by emphasizing customer-level analysis, program scenario analysis, new and emerging technologies and additional use of secondary research, primary research (e.g., what we learn from our evaluation efforts at KPCO) thereby providing a more useful framework for delivering the actionable guidance our clients require to develop and implement an effective portfolio of energy efficiency programs.

When utilities look toward improving the energy efficiency use in their service territories, or expanding existing efficiency initiatives, the first step is typically an energy efficiency potential study. This is where we propose to start our project with KPCO, with one caveat. Recognizing that KPCO will be doubling its existing program efforts by 2016, our study will incorporate a market opportunity component in response to KPCO's increased need for enhanced market analytics and specific energy efficiency potential study customization. A significant part of our work product for KPCO will be an assessment of your opportunities to implement specific energy efficient technologies and programs. The market opportunity analysis that we will undertake will incorporate utility-specific customer and energy efficiency program data, along with detailed external market data of the commercial and residential sectors, as well as the many segments therein. Our analysis will identify the most cost effective and highest impact opportunities for energy efficiency in KPCO's service area. The results will include estimates of the relative market opportunity for energy efficiency among the energy market sectors. Further, it will provide KPCO with additional insight into where to best allocate resources by highlighting differences between customer segments and suggesting optimal marketing and program delivery techniques for each segment.

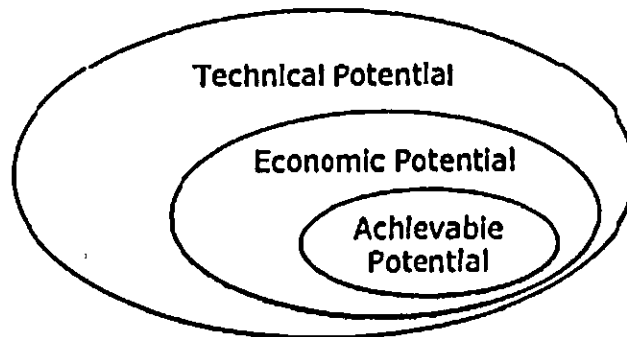
As stated, our work will begin with a traditional market potential study. The input, methodologies, and output of these studies generally follow well-established norms using either top-down or bottom-up approaches to estimate the types of energy efficiency potential and associated costs. As depicted in Figure 1, these types of potential typically include technical (the maximum potential given available technology), economic (the subset of technical potential deemed cost-effective), and achievable (the subset of economic potential that accounts for real-world barriers to improving energy efficiency). Most studies also include variations on achievable potential (typically maximum achievable potential and realistic achievable potential).

Figure 1. Hierarchy of Market Potential

Technical Potential refers to all technically feasible measures

Economic Potential refers to a subset of Technical Potential which can be reached with measures that meet an economic threshold.

Achievable Potential refers to a subset of Economic Potential that could be captured with specific program funding and incentive levels.



The second step of our analysis will be to layer in the market opportunity analysis. The market opportunity analysis aims to bridge the gap between potential studies and the utilities' needs by allowing a utility to: (1) assess aggregate data to inform program strategy and resource deployment; (2) review granular data for tactical planning and implementation; (3) discern differences between customer segments and recognize unique marketing techniques required for each; and (4) better defend their reported energy efficiency budgets and targets. In addition, the market opportunity analysis provides the utility with analyses specific to their service territories that incorporate more accurate baselines, and economic and geographic factors.

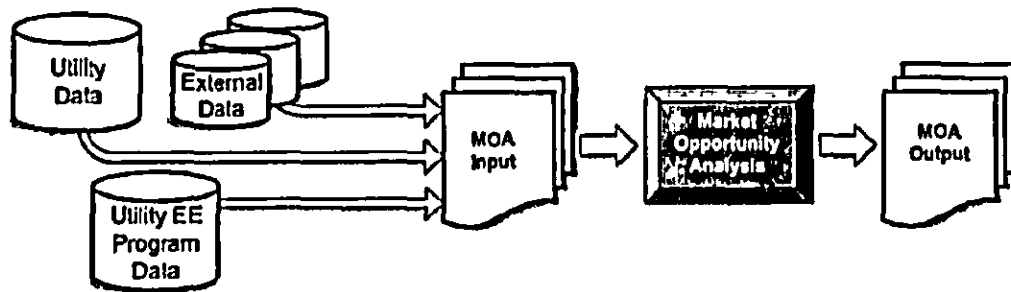
The Market Opportunity Analysis (MOA) is a high-level, forward-looking projection of energy efficiency program opportunities and market prioritization assessments based on energy efficiency market opportunity delineated by market sector, customer segment, energy end-use, and energy efficiency measure. It is a data analysis of utility-specific customer data, current and historic energy efficiency program data, along with external energy efficiency market data and industry information. The analysis provides estimates of the relative market opportunity for energy efficiency between the energy market sectors, and provides the utility with additional insight into how to best allocate resources.

The Market Opportunity Analysis is an assessment of a utility's opportunity to implement energy efficiency technologies and programs. The Market Opportunity Analysis incorporates utility-specific customer and energy efficiency program data, along with detailed external energy efficiency market data of the commercial, industrial and residential sectors, as well as the many segments therein. The analysis identifies the most cost effective and highest impact opportunities for energy efficiency in a utility's service territory. It provides the utility with additional insight into where to best allocate resources by highlighting differences between customer segments and suggesting unique marketing techniques for each.

The Market Opportunity Analysis incorporates three data sets, each of which is crucial to the analysis: Utility Data, Utility energy efficiency Program Data, and External Data (Figure 2). A significant portion of this data is generated by the utility itself, while supplemental industry and regional data are gathered by the analysts.

This analysis structure ensures that the market opportunity analysis is as accurate and territory-specific as possible for the given utility. This approach provides for more accurate baselines and takes into account economic and geographic factors.

Figure 2. Market Opportunity Analysis (MOA)



Utility energy efficiency program data. The energy efficiency Market Opportunity Analysis uses KPCO energy efficiency program data in conjunction with the other utility data and external data in several ways. Historic energy efficiency program implementation data is collected and analyzed with regard to its impact on historic energy efficiency savings, expectations for current and future market energy efficiency opportunities, program and technology efficacy, and technology saturation and adoption rates. This includes analyzing program metrics such as the number of customers reached by each program, percentage of customers using energy efficiency programs to make upgrades, the types of upgrades and measures implemented, estimated energy saved through implementation, and valuation of program cost.

Detailed measure-level data includes descriptions of the energy efficiency measures offered, the estimated energy and demand savings (both in aggregate and by measure), and technology costs. These data are paired with utility-specific data, such as energy consumption forecasts, building stock breakdown, and program administration costs. The result is that the energy efficiency market opportunity analysis can translate the utility's technical and economic energy efficiency potential into much more relevant output, including estimates of how the running of energy efficiency programs will affect consumption and load forecasts. Additionally, this data offers insight into a range of variables such as the effects of the incentive level for a given energy

efficiency technology applied to a given customer segment, and what this may suggest for future program performance.

Thorough evaluation and integration of KPCO energy efficiency program data make better-informed estimates of the rate at which the Company could expect to realize energy efficiency potential in its territory, by measure, segment, and sector, through energy efficiency programs possible.

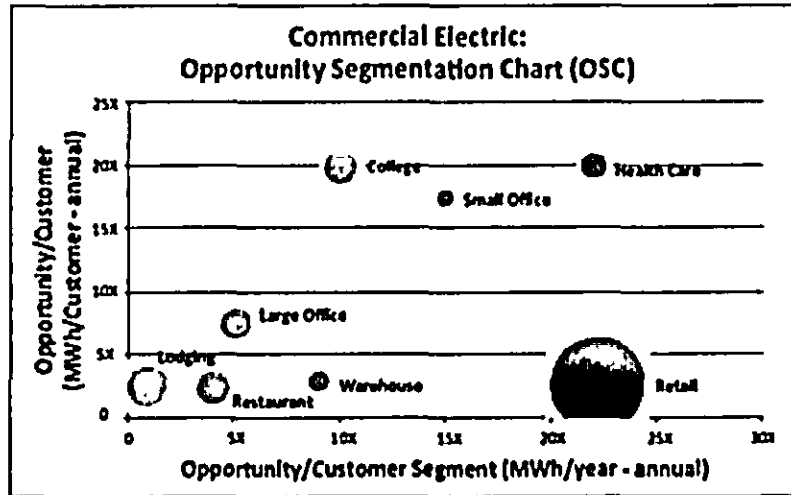
External data. External data is used to provide the framework and methodology for the energy efficiency opportunity estimates, and to include information that may not have been available from the utility. High-level external data collected includes energy use within the utility territory, delineated first by segment (e.g. energy use, building type), then by energy end-use (e.g. lighting, HVAC, refrigeration). External data also includes detail on energy efficiency measures and their applicability across a range of customer segments. Additionally, external sources may be used to fill in gaps in critical data such as avoided cost data, peak coincidence of savings due to energy efficiency measures, and energy usage patterns such as consumption by energy end-use for a particular segment.

Sources of external data used include the U.S. Energy Information Administration's Commercial Energy Consumption Survey, the California Energy Commission's Commercial End Use Survey and Residential Appliance Saturation Survey, and various energy efficiency potential studies performed by the New York State Energy Research & Development Authority, as well as others, including the numerous studies completed by AEG.

The Opportunity Segmentation (OSC) (Figure 3) provides a graphic depiction of the relative market opportunity for each customer segment based on total energy savings opportunity, savings opportunity per customer, and the number of customers in specific customer segments. The OSC independently presents electricity services, as well as commercial and residential sectors (Figure 3 is representative). In addition, the OSC can present combinations of these energy services and sectors collectively on a single chart.

The x-axis of the OSC represents the total savings opportunity for each customer segment; the y-axis represents the savings opportunity per customer for each segment; the bubble size represents the total number of customers in a given segment.

Figure 3. Opportunity Segmentation Chart (OSC)



Further, energy efficiency program implementation data is collected and analyzed with regard to its impact on historic energy efficiency savings, expectations for current and future market energy efficiency opportunity, program and technology efficacy, and technology saturation and adoption rates. This includes analyzing program metrics such as the number of customers reached by each program, percentage of customers using energy efficiency programs to make upgrades, the types of upgrades and measures implemented, estimated energy saved through implementation, and valuation of program cost.

Detailed measure-level data includes descriptions of the energy efficiency measures offered, the estimated energy and demand savings (both in aggregate and by measure) and technology costs. These data are paired with utility-specific data, such as energy consumption forecasts, building stock breakdown, and program administration costs. The result is that the energy efficiency market opportunity analysis can translate the utility's technical and economic energy efficiency potential into much more relevant output, including estimates of how the running of energy efficiency programs will affect consumption and load forecasts. Additionally, these data offer insight into a range of variables such as the effects of the incentive level for a given energy efficiency technology applied to a given customer segment, and what this may suggest for future program performance.

Thorough evaluation and integration of KPCO (and other utility) energy efficiency program data make possible better-informed estimates of the rate at which the utility could expect to realize energy efficiency potential in its territory, by measure, segment, and sector, through energy efficiency programs.

Our final report to KPCO will be structured in a similar fashion to the outline immediately below.

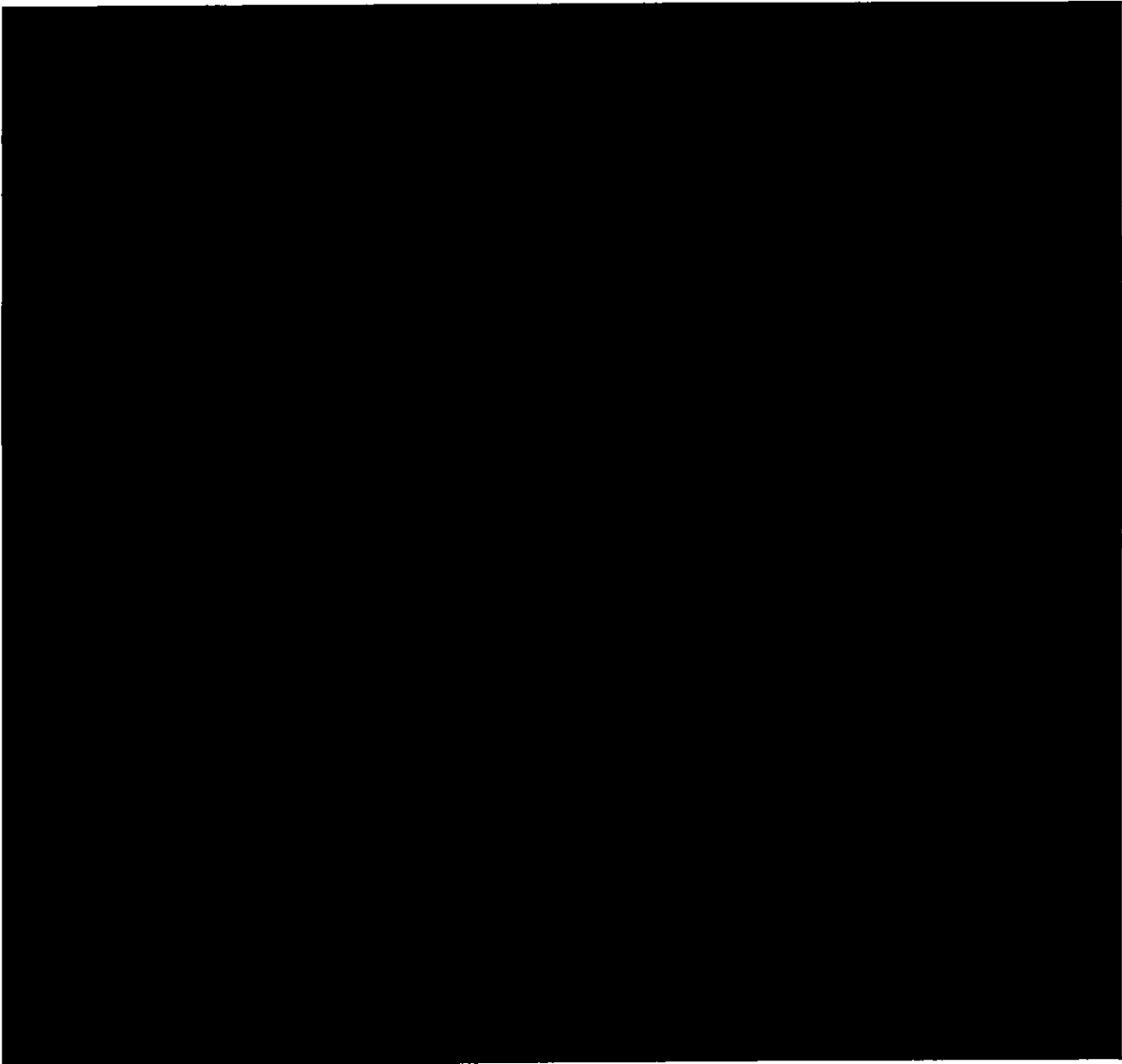
EXECUTIVE SUMMARY

1. **INTRODUCTION:** An explanation of the plan development process with a discussion of the various components that went into creating the energy efficiency portfolio.
2. **FORECAST AND SCREEN INPUTS:** Underlying assumptions and data inputs that guided the technical potential.
3. **POTENTIAL ASSESSMENT:** A description of the economic screening of energy efficiency measures, including details of the underlying methodology, results, and how they were incorporated into the program design.
4. **GENERAL PROGRAM DESIGN APPROACH:** A description of the overall program development strategy.
5. **INCORPORATION OF OPPORTUNITY SEGMENTATION ANALYSIS**
6. **ENERGY EFFICIENCY PROGRAMS:** Descriptions in detail of the residential, non-residential and special programs that form the overall energy efficiency portfolio. This includes general discussions of topics relevant to the programs as well as detailed descriptions of individual programs, including budgets, participation, measures, impacts, and, where required cost-effectiveness results.
7. **MARKETING, IMPLEMENTATION AND MONITORING STRATEGIES:** For each program AEG will identify, with KPCO staff support the optimal deployment approaches to reach the aggressive goals established in 2012-00578.
8. **CONCLUSION**
9. **APPENDICES**

The potential study will provide estimates of technical, economic and achievable potential in a format consistent with industry standards. The results of AEG's achievable potential analysis will be used by AEG with input from KPCO or Company's senior leadership team to develop customer class relevant program designs.

At the heart of every analysis of energy efficiency potential is a demand-side management (DSM) model and portfolio screening tool used for calculating the costs and benefits associated with various efficiency measures (technologies and design practices). The analysis of energy efficiency potential, whether Technical, Economic or Achievable, can be summarized as follows:

1. Identify the avoided costs of energy, line loss factors and related inputs to the DSM model.
2. Determine the potential efficiency measure characterizations, including costs and savings relative to a baseline where it assumes that efficiency measures will not be implemented. Determine measure penetration rates based on sales forecasts by sector.
3. Develop load shapes for distributing energy savings by period (e.g., summer and non-summer).
4. Apply these inputs into the portfolio screening tool, which calculates the energy and demand savings by efficiency measure and for the total portfolio.





Pricing and Timing

We estimate the cost of the scope of work to be approximately \$80,000; including three trips to Ashland (or locations of your choosing). We are able to provide these services at a relatively low cost because we can leverage our experience with KPCO, our history of prior research, and work conducted for other clients. We estimate the total duration of the project to between 20 and 24 weeks.

Thank you for the opportunity to bid our services. Please contact me with any questions.

Sincerely,



Robert Obeiter

Executive Vice President

201.444.1910

robeiter@appliedenergygroup.com



Kentucky Power Company

REQUEST

Please state when the Company plans to submit its next DSM filing.

RESPONSE

The next scheduled date for filing a DSM Status Report is August 15, 2014. The Company may submit program applications before this date as the information is completed and made ready for filing with the Commission.

WITNESS: E J Clayton



Kentucky Power Company

REQUEST

Please state whether the next DSM filing will reflect the increased 2015 DSM spending level required under the Commission's October 7, 2013 order in Case No. 2012-00578.

RESPONSE

Yes.

WITNESS: E J Clayton



Kentucky Power Company

REQUEST

Please explain whether and how the proposed DSM Market Potential Study will inform the Company's next DSM filing.

RESPONSE

The study should not affect the next filing scheduled for August 15, 2014.

WITNESS: E J Clayton