

**BEFORE THE**  
**KENTUCKY PUBLIC SERVICE COMMISSION**

In The Matter Of: )  
 )  
THE ANNUAL COST RECOVERY FILING ) Case No. 2017-00427  
FOR DEMAND SIDE MANAGEMENT BY )  
DUKE ENERGY KENTUCKY, INC. )

**FILING OF THE ANNUAL STATUS REPORT, ADJUSTMENT OF THE DSM COST RECOVERY MECHANISM, AND AMENDED TARIFF SHEETS FOR GAS RIDER DSMR (SHEET NO. 62) AND ELECTRIC RIDER DSMR (REVISED SHEET NO. 78)**

Now comes Duke Energy Kentucky, Inc. (Duke Energy Kentucky or the Company) with the consensus of the Residential Collaborative and the Commercial and Industrial Collaborative, and pursuant to prior Orders of the Kentucky Public Service Commission (Commission) relevant to Duke Energy Kentucky’s Demand Side Management (DSM) strategy,<sup>1</sup> and hereby files its Annual Status Report, Adjustment of the DSM Cost Recovery Mechanisms for both gas and electric service (DSM Riders), and Amended Tariff Sheets for Gas Rider DSMR and Electric Rider DSMR (Application).

1. Pursuant to 807 KAR 5:001, Section 14(2), Duke Energy Kentucky is a Kentucky corporation that was originally incorporated on March 20, 1901, is in good standing and, as a public utility as that term is defined in KRS 278.010(3), is subject to the Commission’s jurisdiction. Duke Energy Kentucky is engaged in the business of furnishing natural gas and

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<sup>1</sup> See November 4, 2004 Order in Case No. 2003-00367, February 14, 2005 Order in Case No. 2004-00389, April 4, 2006 Order in Case No. 2005-00402, May 15, 2007 Order in Case No. 2006-00426, May 14, 2008 Order in Case No. 2007-00369, May 12, 2009 Order in Case No. 2008-00473, March 22, 2010 Order in Case No. 2009-00444, June 7, 2011 Order in Case No. 2010-00445, April 13, 2012 Order in Case No. 2011-00448, June 29, 2012 Order in Case No. 2012-00085, April 11, 2013 Order in Case No. 2012-00495, March 28, 2014 in Case No. 2013-00395, May 7, 2015 in Case No. 2014-00388, April 4, 2016 in Case No 2015-00368 and March 28, 2017 in Case No. 2016-00382.

electric services to various municipalities and unincorporated areas in Boone, Bracken, Campbell, Gallatin, Grant, Kenton, and Pendleton Counties in the Commonwealth of Kentucky.

2. Duke Energy Kentucky's business address is 139 East Fourth Street, Cincinnati, Ohio 45202. The Company's local office in Kentucky is Duke Energy Envision Center, 4580 Olympic Boulevard, Erlanger, Kentucky 41018. Duke Energy Kentucky's email address is KYfilings@duke-energy.com.

3. On October 30, 2017, the Residential Collaborative<sup>2</sup> and the Commercial & Industrial Collaborative<sup>3</sup> met to review the Application. With the exception of the Office of the Kentucky Attorney General and the Department of Energy Development and Independence, which reserves the right to reflect its opinion at a later date, the members of both the Residential Collaborative and the Commercial & Industrial Collaborative agreed with this Application. Unless otherwise stated, the Residential Collaborative and the Commercial & Industrial Collaborative are jointly referred to herein as "Collaborative."

4. In addition to filing the annual status report in this Application, Duke Energy Kentucky and the Collaborative respectfully request a modification of Duke Energy Kentucky's DSM Riders to reflect the reconciliation of planned and actual expenditures, lost revenues, and shared savings.

5. Pursuant to the Commission's Order dated June 29, 2012, in Case No. 2012-00085, the Company's portfolio of programs in effect during the fiscal year covered by this Application were approved through December 31, 2016. The Company requested and received approval to

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<sup>2</sup> The Residential Collaborative members in attendance were: Kent Chandler (Office of the Kentucky Attorney General), Staci O'Leary (People Working Cooperatively), Laura Pleiman (Boone County), Karen Wilson and Lee Colten (Department of Energy Development and Independence), Florence Tandy (Northern Kentucky Community Action), and Tim Duff and Trisha Haemmerle (Duke Energy).

<sup>3</sup> The Commercial & Industrial Collaborative members in attendance were: Kent Chandler (Office of the Kentucky Attorney General), Staci O'Leary (People Working Cooperatively), Karen Wilson and Lee Colten (Department of Energy Development and Independence), and Tim Duff and Trisha Haemmerle (Duke Energy).

continue the approved portfolio beyond December 31, 2016 with the commitment to file the annual cost recovery DSM filing and the annual amendment filing.<sup>4</sup> As a result, this Application serves as the annual true-up of the fiscal year ending June 30, 2017 of programs.

### **Background**

6. The Company's offering of DSM programs dates back close to two decades.<sup>5</sup> Throughout the years, the Company has offered many enhancements to its portfolio with the purpose of increasing participation and providing customers new and innovative opportunities to control their consumption and impact their utility bill. The portfolio of programs in place during the fiscal year ending June 30, 2017 and that is the subject of this Application was approved by the Commission's June 29, 2012 Order in Case No. 2012-00085. That Order approved continuation of all programs through December 31, 2016. The Company requested and received approval to continue the approved portfolio beyond December 31, 2016.<sup>6</sup> In Duke Energy Kentucky's 2012 DSM cost recovery Order, Case No. 2012-00495, the Commission ordered that any new program evaluations, program expansions or new programs be filed by August 15<sup>th</sup> each year. Duke Energy Kentucky has been filing this amendment filing since 2013<sup>7</sup> to enhance the DSM portfolio and

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<sup>4</sup> Order in Case No. 2015-00277

<sup>5</sup> In the Matter of the Joint Application Pursuant to 1994 House Bill No. 501 For the Approval of Principles of Agreement, Demand Side Management, The Union Light Heat and Power Company, and for Authority for the Union Light Heat and Power Company to Implement Various Tariffs and Receive Incentives Associated the Demand Side Management Programs, Case No. 95-312, Order December 1, 1995.

<sup>6</sup> Order in Case No. 2015-00277

<sup>7</sup> The Commission's December 19, 2013 Order in Case No. 2013-00313 approved residential Heat Pump Water Heaters, Energy Efficiency Pool Pumps, Single Family and Multi-Family Water Measures, and updated the measures available within the Smart Saver® Prescriptive Program. The Commission's January 28, 2015 Order in Case No. 2014-00280 approved adding additional lighting options to the Smart Saver® Residential Program, offer the My Home Energy Report as an online channel, and approved a new Non-Residential Small Business Energy Saver program. Additional program changes were filed in Case No. 2015-00277. In Case No. 2016-00289 Duke Energy Kentucky received approval to include Power Manager for Apartments, Power Manager for Business and additional program changes to existing programs. Pending case 2017-00324 requested additional funding for the Smart Saver Custom program.

react to market changes and customer needs. This filing has given Duke Energy Kentucky the opportunity to refresh the portfolio on an annual basis.

7. Like the Company's prior annual DSM filings, this Application specifically addresses the requirements in prior Commission Orders<sup>8</sup> and is being made consistent with the Commission's September 18, 2007 Order in Case 2007-00369 granting Duke Energy Kentucky's request to file annual DSM applications no later than November 15. In the status and reconciliation portion of this report, expenses are reported for the fiscal year period July 1, 2016 through June 30, 2017.

8. In this Application, Duke Energy Kentucky also requests an Order approving the proposed adjustments to the DSM riders and the revised tariffs (Appendices C – D).

#### **Definitions**

For the purposes of this Application, the following terms will have the following meanings:

9. **"DSM Revenue Requirements"** shall mean the revenue requirements associated with all Program Costs, Administrative Costs, Lost Revenues (less fuel savings), and the Shareholder Incentive.

10. **"Program Costs"** shall mean the costs incurred for planning, developing, implementing, monitoring and evaluating the DSM programs that have been approved by the Collaborative.

11. **"Administrative Costs"** shall mean the costs incurred by or on behalf of the collaborative process and that are approved by the Collaborative, including, but not limited to,

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<sup>8</sup> November 20, 2003 Order in Case No. 2003-00367, February 14, 2005 Order in Case 2004-00389, April 4, 2006 Order in Case No. 2005-00402, May 15, 2007 Order in Case No. 2006-00426, May 14, 2008 Order in Case No. 2007-00369, March 22, 2010 Order in Case No. 2009-00444, June 7, 2011 Order in Case No. 2010-00445, April 13, 2012 Order in Case No. 2011-00448, April 11, 2013 Order in Case No. 2012-495, March 28, 2014 Order in Case No. 2013-00395, May 7, 2015 Order in Case No. 2014-00388, April 4, 2016 Order in Case No 2015-00368 and March 28, 2017 in Case No. 2015-00382.

costs for consultants, employees and administrative expenses.

12. **“Lost Revenues”** shall have the same meaning as “LR” as described in Rider DSM - Demand Side Management Cost Recovery Rider, Sheet No. 75<sup>9</sup>

13. **“Shareholder Incentive”** shall have the same meaning as “PI” as described in Rider DSM - Demand Side Management Cost Recovery Rider, Sheet No. 75

14. **“DSM Cost Recovery Mechanism”** shall refer to Rider DSM - Demand Side Management Cost Recovery Rider, Sheet No. 75

15. **“Voucher”** shall mean the credit receipt the customer receives from a social service agency. The voucher can be used by the customer as a partial payment toward the utility bill.

#### **Status of Prior Portfolio of DSM Programs**

16. Through June 30, 2017, Duke Energy Kentucky offered the following programs, the costs of which are recoverable through the DSM Cost Recovery Rider mechanism approved by the Commission in prior proceedings:

- Program 1: Residential Smart Saver<sup>®</sup> Energy Efficient Residences Program
- Program 2: Residential Smart Saver<sup>®</sup> Energy Efficient Products Program<sup>10</sup>
- Program 3: Residential Energy Assessments Program (Residential Home Energy House Call)
- Program 4: Energy Efficiency Education Program for Schools Program
- Program 5: Low Income Services Program
- Program 6: Residential Direct Load Control- Power Manager<sup>®</sup> Program

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<sup>9</sup> Pending approval of tariff Sheet No.75 in Case No. 2017-00324

<sup>10</sup> The Smart Saver<sup>®</sup> Residential Energy Efficient Products Program and the Energy Efficient Residences Program are individual measures that are part of a single and larger program referred to and marketed as Residential Smart Saver.<sup>®</sup> For ease of administration and communication with customers the two measures have been divided into separate tariffs even though they are a single program.

- Program 7: Smart Saver<sup>®</sup> Prescriptive Program
- Program 8: Smart Saver<sup>®</sup> Custom Program
- Program 9: Smart Saver<sup>®</sup> Energy Assessments Program
- Program 10: Peak Load Manager (Rider PLM) - PowerShare<sup>®</sup> Program
- Program 11: Low Income Neighborhood Program
- Program 12: My Home Energy Report Program
- Program 13: Small Business Energy Saver Program
- Program 14: Pay for Performance
- Program 15: Power Manager<sup>®</sup> for Apartments
- Program 16: Power Manager<sup>®</sup> for Business

17. This section of the Application provides a brief description of each current program, a review of the current status of each program, and information on any changes that may have been made to the programs. The following table provides a brief summary of the load impacts achieved and level of participation obtained during this filing period.

<b>1 Summary of Load Impacts July 2016 Through June 2017</b>			
	<b>Incremental Participation</b>	<b>kWh</b>	<b>kW</b>
<b>Residential Programs</b>			
Appliance Recycling Program	-	-	-
Energy Efficiency Education Program for Schools	1,504	483,863	129
Low Income Neighborhood	689	257,693	76
Low Income Services	220	274,939	65
My Home Energy Report	2	54,512	11,187,354
Residential Energy Assessments	2,469	433,777	78
Residential Smart Saver®	349,515	8,135,927	1,022
Power Manager®	3	12,553	-
Power Manager® for Apartments	-	-	12,317
<b>Total Residential</b>	<b>421,462</b>	<b>20,773,552</b>	<b>16,988</b>
<b>Non-Residential Programs</b>			
	<b>Incremental Participation</b>	<b>kWh</b>	<b>kW</b>
Smart Saver® Non-Residential Performance Incentive Program	-	-	-
Smart Saver® Prescriptive - Energy Star Food Service Products	121	153,200	17
Smart Saver® Prescriptive - HVAC	222,076	365,121	139
Smart Saver® Prescriptive - Lighting	139,979	15,810,694	3,013
Smart Saver® Prescriptive - Motors/Pumps/VFD	79	41,866	3
Smart Saver® Prescriptive - Process Equipment	225	99,097	24
Smart Saver® Prescriptive - IT	-	-	-
Smart Saver® Custom	2,691	3,852,617	428
Small Business Energy Saver	4,067,887	3,757,565	768
Power Manager® for Business	-	-	-
PowerShare®	4	17	-
<b>Total Non-Residential</b>	<b>4,433,075</b>	<b>24,080,160</b>	<b>11,708</b>
<b>Total</b>	<b>4,854,537</b>	<b>44,853,712</b>	<b>28,696</b>
<p>1 - Impacts are net of freeriders, without losses and reflected at the customer meter point.  2 - Actual participants and impact capability shown as of the June 2017 mailings.  3 - Cumulative number of controlled devices installed. Impacts reflect average capability over the contract period.  4 - Impacts reflect average capability over the contract period.</p>			

18. Results of the current cost-effectiveness test results for each of the programs are provided in Appendix A.

**Program 1 and 2: Residential Smart Saver® Energy Efficient Residences and Products Programs**

19. The purpose of the Residential Smart Saver® Energy Efficient Residences portion of the Residential Smart Saver® Program is to offer customers a variety of energy conservation measures designed to increase energy efficiency in their homes. The program utilizes a network of contractors to encourage the installation of high efficiency equipment and the implementation of energy efficient home improvements. Equipment and services to be incentivized include:

- Installation of high efficiency air conditioning (AC) and heat pump (HP) systems;
- Performance of AC and HP tune-up maintenance services;
- Implementation of attic insulation and air sealing services;
- Implementation of duct sealing and insulation services; and
- Installation of efficient heat pump water heaters.

20. The Residential Smart Saver<sup>®</sup> Program received approval in the Commission's June 7, 2011 Order in Case No. 2010-00445. Duke Energy Kentucky launched the Residential Smart Saver<sup>®</sup> Program into the market on August 15, 2011, but only offered incentives for the installation of the high efficiency AC and HP systems due to an ongoing vendor selection process. Once the vendor selection process and subsequent transition completed in April 2012, the remaining incentives for the additional products and services were launched into the market and offered to residential Kentucky customers. Note, duct insulation received Commission approval June 29, 2012 and was subsequently added to the program. Heat pump water heaters were approved in December 23, 2013 Order in Case No. 2013-00395, and subsequently launched into the market during third quarter of 2014.

21. The Company filed to implement modifications to the Program in Case No. 2015-00277 and received Commission approval February 12, 2016. These modifications were launched into the market during April 2016 and included adding a tier approach to the level of incentives for AC and HP systems based on the efficiency rating of the system, and delivering the full incentive level to the customer. In addition, two new optional measures, smart thermostat and quality installation, offer customers additional incentives at the time of AC or HP equipment replacement installation. A referral component for eligible trade allies has also been



added as a new delivery channel to enhance customer experience. This tier approach to AC and HP systems promotes higher efficiency equipment and allows customers to add on additional services at the time of installation. The referral component of the Program is a new delivery channel service that simplifies the customer's energy decision-making purchases.

22. The Program successfully transitioned to this new incentive structure during 2016 that offered more choices for customers, but also removed a \$100 incentive to the trade ally dealers, with the incentive being directed to the customer. After more than a year of operation, the program is experiencing application volumes similar or greater than the previous program structure, exceeding the expected decline in volumes. The greater than expected participation has led to increased program costs, with the majority of those costs for customer incentives.

23. Duke Energy Kentucky currently contracts with Blackhawk Engagement Solutions (BES) to administer this program. BES provides services including application processing and fulfillment, data reporting, call center services, and IT support for program tools such as the trade ally portal which allows trade allies to register, check customer eligibility, and submit applications online. These Residential Smart Saver<sup>®</sup> services are jointly implemented with the Duke Energy Indiana, Duke Energy Ohio, and Duke Energy Carolinas territories to reduce administrative costs and leverage promotion. BES has experience in delivering similar utility energy efficiency programs.

24. The purpose of the Residential Smart Saver<sup>®</sup> Energy Efficient Products portion of the Residential Smart Saver<sup>®</sup> Program is to provide high efficiency lighting through various channels, along with other high efficiency products in new or existing residences, including pool pumps, water measures for single family, and water measures for multifamily.

25. The Free Lighting component of the program was designed to increase the energy efficiency of residential customers by offering customers 9 Watt LEDs to install in high-use fixtures within their homes. The LED offer was available through an on-demand ordering platform, enabling customers to request LEDs and have them shipped directly to their homes. Customers may have the ability to order in quantities of 3, 6, 8, 12, and 15 packs. Quantities offered by the platform are dependent on past participation in free lighting programs that contribute to their free bulb limit.<sup>11</sup>

26. Through the ordering platform, customers have the flexibility to order and track their shipments through three separate channels; telephone, Duke Energy web site and Online Services.

- Telephone
  - Customers may call a toll free number to access the IVR (Interactive Voice Response) system which provides prompts to facilitate the ordering process. Both English and Spanish speaking customers may easily validate their account, determining their eligibility and place their order over the phone.
- Duke Energy Web Site
  - Customers can go online to complete the ordering process. Eligibility rules and frequently asked questions are available for reference.
- Online Services (OLS)
  - Customers who participate in the OLS program are encouraged to log into their account and place their order if they are eligible. New OLS customer

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<sup>11</sup> As approved in Case No. 2016-00112.

registrations and eligible customers may be intercepted upon logging in to make them aware of the program.

27. The benefits of providing these three distinct channels include; improved customer experience, advanced inventory management, simplified program coordination, enhanced reporting, increased program participation and reduced program costs.

28. In addition to serving customers who have not previously met their 15 free bulb limit, beginning March 18<sup>th</sup>, 2017, the program began offering customers who have met their 15 bulb limit, the ability to order up to 12 Free LEDs as long as the order(s) for the initial 15 bulbs was greater than 5 years ago. Both sets of customers expressed interest in the program with 22,779 orders accounting for 296,290 LEDs. This level of customer demand was the main driver behind the program's spend exceeding what it budgeted by over 222% for the fiscal year.

29. The Residential Smart Saver<sup>®</sup> lighting program launched an online Saving Store for specialty lighting on April 26, 2013. The Savings Store is an extension of the on-demand ordering platform enabling eligible customers to purchase specialty bulbs and have them shipped directly to their homes. The program offers a variety of LEDs including: Reflectors (indoor and outdoor), Globes, Candelabra, 3 ways, Dimmables and certain A-line type bulbs of wattages not included in the Free LED offer. The incentive levels vary by bulb type and the customer pays the difference, including shipping. The maximum number of incentivized bulbs available for each residential account is 36 lighting products. Customers can check eligibility and shop for specialty bulbs through the Company Web Site and OLS. The Savings Store is managed by a third party vendor, Energy Federation Inc. (EFI). EFI is responsible for maintaining the Savings Store and fulfilling all customer purchases. The Saving Store landing page provides information about the store, lighting products, account information and order history. Support features include a toll

free number, package tracking and frequently asked questions.

30. An educational tool is available to help assist customers with their purchasing decisions. The interactive tool provides information on bulb types, application types, savings calculator, lighting benefits, understanding watts versus lumens and recycling/safety tips.

31. The Online Savings Store program carefully tracks towards budget by monitoring our marketing activities to customers. However, based on customer engagement & demand driven by our marketing, customers responded much better than anticipated. Therefore, the program did go over the 2016-2017 due to customers' interest in purchasing energy saving lighting products.

32. The Multifamily Energy Efficiency Program is an extension of the Residential Smart Saver<sup>®</sup> lighting program and allows Duke Energy Kentucky to utilize an alternative delivery channel which targets multifamily apartment complexes. The measures are directly installed in permanent fixtures by the program vendor, Franklin Energy, or the property management staff via the Do It Yourself (DIY) option. The target audience for the program is property managers who have properties that consist of four or more units and are served on an individually metered residential rate schedule. In order to receive water measures, apartments must have electric water heating. Properties that have already been served by the Property Manager CFL program are only eligible for water measures.

33. The Program helps property managers upgrade lighting with energy efficient 13 watt CFLs and also saves energy by offering water measures such as bath and kitchen faucet aerators, water saving showerheads and pipe wrap. The quantity of lighting measures installed is based on apartment size. Franklin Energy may install up to 12 bulbs in a one bedroom apartment, up to 15 bulbs in a two bedroom apartment and up to 18 bulbs in a three bedroom apartment.

These measures assist with reducing maintenance costs while improving tenant satisfaction by lowering energy bills.

34. As program implementer, Franklin Energy is responsible for all marketing and outreach for the program. This is primarily done through outbound calls and on-site visits to solicit initial interest in the program from property managers in the Company's service territory. Additionally, program information and supporting documents are available on the Duke Energy web site for Property Managers to learn more about the program and request applications to participate in the program.

35. Duke Energy Kentucky recently received approval to replace CFLs with LEDs for the lighting offering associated with the Multi-Family Program.<sup>12</sup> Beginning in July 2017, the Program began installing LED lighting. The Program also added two additional bulb types to bring the LED offering to three types with unlimited quantities per unit. The three bulbs (A-Line, Candelabras, Globes) will provide more options for tenants, be more aesthetically appealing and create more bill savings. Property managers and owners will also receive benefits with the longer lasting bulbs, which reduce maintenance costs for the properties and make the units more marketable to tenants.

36. Multifamily installations focused activity for the fiscal year in 2017 and completed 3,794 measure installations from April to May, achieving 131% of the 2016-2017 fiscal year goal of 2,896 measures. The program exceeded goal for the energy efficient showerhead and lighting measures due to the additional opportunities presented during the installation. Once inside the unit, the installers will ensure all energy efficient opportunities are provided to the customer which is likely to exceed goal for the measures provided through the

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<sup>12</sup> In the Matter of the Application of Duke Energy Kentucky, Inc., to Amend its Demand Side Management Programs, Case No. 2016-002892, KY. P.S.C. Order May January 24, 2017.

program.

37. The Save Energy and Water Kit (SEWK) program is designed to increase the energy efficiency of residential customers by offering customers low flow water devices and insulating pipe tape to install within their homes. The SEWK offer is available through a business reply card (BRC), enabling customers to request a kit and have it shipped directly to their homes.

38. In order to be eligible, customers must have a water heater powered by electricity, have not already participated in SEWK or other Duke Energy Kentucky programs offering low flow water devices and be the resident of a single family home. Eligible customers, who accept the BRC offer, will receive a kit free of charge. There are two kit sizes to accommodate homes with 1 or more full bathrooms. The kits contain varying quantities of shower heads, bath aerators, kitchen aerators and insulated pipe tape.

39. A website has been established to provide customers with additional information about the program and instructional videos to assist in the installation of items from the DIY kit.

40. In the 2016-2017 fiscal year, the program achieved higher than forecasted results due to two factors. The customer take rate in Duke Energy Kentucky was higher than other Duke Energy jurisdictions. Additionally, customers continued to redeem BRCs from previous campaigns which increased participation above forecasted levels.

41. Duke Energy Kentucky has also been working on implementing a Retail Lighting marketing channel. This upstream, buy-down retail-based lighting program works through lighting manufacturers and retailers to offer discounts to Duke Energy customers selecting incentivized LEDs and energy-efficient fixtures at the shelf for purchase at the register. Retailers, such as, but not limited to, Home Depot, Lowe's, Sam's Club, Walmart and Costco will be

evaluated at the store level for possible inclusion in this program.

42. This program encourages customers to adopt energy efficient lighting through incentives on a wide range of LED products, including Reflectors, Globes, Candelabra, 3 Way, Dimmable and A-Line type bulbs, as well as fixtures. Customer education is imperative to ensure customers are purchasing the correct bulb for the application in order to obtain high satisfaction with energy efficient lighting products, ensuring subsequent energy efficient purchases.

43. The incentive amount varies by product type and the customer pays the difference as well as any applicable taxes. Pack limits will be in place and enforced to the best of the retailers' ability.

44. A vendor will be utilized to implement this program. This vendor will be an industry leader and will leverage their existing relationships and systems established with the participating retailers and manufacturers. Additionally, the vendor will have a field team in place to promote and monitor this program at the participating retail locations. A toll free call center and website will be hosted by the vendor to provide program information to Duke Energy Kentucky customers. The website will include a retailer locator where customers can enter their zip code and search for retailers and specific bulb and fixture types in their area. A tool available to customers is an interactive savings calculator, which will explain the different types of lighting technologies, help guide customers to the appropriate bulb(s) for their application and provide an estimate of energy and monetary savings. Eligible program participants include Duke Energy Kentucky residential customers.

45. The primary goals for this program are to help customers lower their energy bills and to remove inefficient equipment from the electric grid. This program educates customers about energy consumption attributed to lighting and how to reduce their consumption by using

high efficiency alternatives.

46. This program will implement an integrated marketing plan which may include, but is not limited to:

- Point of Purchase materials at the participating retailer locations;
- Duke Energy and Program website;
- General Awareness Campaigns, including, but not limited to:
  - Bill Inserts;
  - Email;
  - Digital advertising;
  - Paid advertising/mass media; and
  - Out of Home advertising;
- Advertised events at key retailers including:
  - Direct mail;
  - Email;
  - Paid advertising/mass media (radio, newspaper, etc.);
  - Social media; and
  - In Store materials (fliers, bag stuffers, posters, banners, etc.).
- Community outreach events (home shows, sporting events, cultural events, etc.).

47. These marketing efforts are designed to create customer awareness of this program, to educate customers on energy saving opportunities and to emphasize the convenience of Program participation. Additionally, marketing efforts related to advertised in-store events are designed to motivate customer participation.



### **Program 3: Residential Energy Assessments Program**

48. The primary goal for Home Energy House Call (HEHC) is to empower customers to better manage their energy usage and cost. Duke Energy Kentucky partners with several key vendors to administer the program which an energy specialist completes a 60 to 90 minute walk through assessment of the home and analyzes energy usage to identify energy savings opportunities. The Building Performance Institute (BPI) Building certified energy specialist discusses behavioral and equipment modifications that can save energy and money with the customer. The program targets Duke Energy Kentucky residential customers that own a single family home with at least four months usage history and have electric water heater and/or electric heat, or central air. The energy specialist analyzes energy usage, checks air infiltration, examines insulation levels, checks appliances and inspects the heating/cooling system(s). The report focuses on the building envelope improvements as well as low-cost and no-cost improvements to save energy. At the time of the home audit, the customer receives a free efficiency kit containing a variety of energy saving measures such as energy efficient lighting, low flow shower head, low flow faucet aerators, outlet/switch gaskets and weather stripping. The auditors will install these measures, if approved by the customer, so the customer can begin saving immediately, and to help insure proper installation and use. Example recommendations might include the following:

- Turning off vampire load equipment when not in use;
- Turning off lights when not in the room;
- Using energy efficient lighting in light fixtures;
- Using a programmable thermostat to better manage heating and cooling usage;

- Replacing older equipment with more energy efficient equipment; and
- Adding insulation and sealing the home.

49. During this filing period the primary communication channel included electronic mail and direct mail to acquire the proposed participation for this program. The program continues to drive online awareness through the Duke Energy website and online services but has additionally been promoted through paid engine searches and Facebook campaigns.

**Program 4: Energy Efficiency Education Program for Schools Program**

50. The Energy Efficiency Education Program for Schools offers two educational interactions: 1) an in depth classroom curriculum through the National Energy Education Development (NEED) project; and 2) a live theatrical production by The National Theatre for Children (NTC).

51. The NEED project provides educators with an engaging and exciting energy curriculum for students in classrooms. The NEED project is designed to teach energy concepts of force, motion, light, sound, heat, electricity, magnetism, energy transformations, and energy efficiency. Energy curriculum, based upon State standards, and hands-on kits, provided to teachers for use in their classrooms, emphasize science inquiry and application of energy knowledge. Energy workshops are designed to provide educators (teaching grades K-12) with the content knowledge and process skills to return to their classrooms and communities, energize and educate their students, provide outreach to families and conduct energy education programs that assist families in implementing behavioral changes that reduce energy consumption. Teachers can utilize the classroom energy kits and curriculum over many years. In addition, Duke Energy Home Energy Efficiency Kits are delivered to the classrooms to teach students and families how to install energy efficiency measures in their homes and to record energy savings.

52. Kentucky NEED manages the overall implementation for the Duke Energy Kentucky program and works with individual schools, teachers, and students to gain the maximum impact for the program. Kentucky NEED has received numerous accolades for its support of energy efficiency and conservation in local schools, for its support of ENERGY STAR's Change the World Campaign, and for the integration of a student/family approach to conservation education. To support, recognize and encourage student energy leadership, Kentucky NEED hosts the annual Kentucky NEED Youth Awards for Energy Achievement in Washington, D.C., honoring teams of students who have successfully planned and facilitated energy projects in their schools and communities. NEED held two teacher workshops in the 2016/2017 school year with 46 teachers representing 31 schools in the September training and 14 teachers representing 8 schools participating in the March training.

53. To document the energy savings associated with the program, a home survey is provided for use in the classroom and with the Saving Energy at Home and School Kit, which serves as a companion to the Home Energy Efficiency Kits delivered to families in the Duke Energy Kentucky service area. Data collected from the home survey is collected and provided to Duke Energy Kentucky annually. The data shows that the measures included in the Home Energy Efficiency Kits are being installed and utilized. Pursuant to a notification letter provided to the Kentucky Public Service Commission in March 2016, the Program began providing LEDs in its Home Energy Efficiency Kit in April 2016. The LEDs replace CFLs and offer more advanced lighting technology and greater savings. In addition to LEDs, the Duke Energy Kentucky kit includes an energy efficient shower head, faucet aerators, a hot water temperature gauge card, outlet insulation pads, and a water flow meter bag. During the 2016 -17 school year, the NEED program distributed 82 kits to classrooms for Duke Energy Kentucky qualified

customers.

54. The live theatrical production presented by NTC is designed to educate students about energy efficiency. Participating students are eligible to receive a home energy efficiency starter kit that will be sent to the students' homes. This is the same kit offered through NEED in the classrooms. The NTC program provides principals and teachers with innovative curricula that educate students about energy, electricity, ways energy is wasted and how to use resources wisely. Education materials focus on concepts such as energy, renewable fuels, and energy conservation through classroom and take home assignments, enhanced with a live 25 minute theatrical production by two professional actors. NTC performances target students in grades K-8. During the school year 2016-2017, NTC performed at 34 Kentucky schools and reached over 9,900 students. As a result, over 1,350 kits were delivered to Duke Energy Kentucky qualified customers from participating schools.

#### **Program 5: Low Income Services Program**

##### ***Weatherization***

55. The Weatherization program portion of Low Income Services is designed to help the Company's income-qualified customers reduce their energy consumption and lower their energy cost. This program specifically focuses on LIHEAP (Low Income Home Energy Assistance Program) customers that meet the income qualification level (*i.e.*, income below 150% of the federal poverty level). This program uses the LIHEAP intake process as well as other community outreach initiatives to improve participation. The program provides direct installation of weatherization and energy-efficiency measures and educates Duke Energy Kentucky's income-qualified customers on their energy usage and other opportunities that can help reduce energy consumption and lower energy costs. The program has provided

weatherization services to the following number of customers:

<b>Fiscal Year</b>	<b>Customers Served</b>
1999 - 2000	251
2000 - 2001	283
2001 - 2002	203
2002 - 2003	252
2003 - 2004	252
2004 - 2005	130
2005 - 2006	232
2006 - 2007	252
2007 - 2008	265
2008 - 2009	222
2009 - 2010	199
2010 - 2011	234
2011 - 2012	220
2012 - 2013	228
2013 - 2014	143
2014 - 2015	203
2015 - 2016	162
2016 - 2017	166

56. The program is structured so that homes needing the most work, and having the highest energy use per square foot, receive the most funding. The program accomplishes this by placing each home into one of two “Tiers.” The tiered process allows the agencies to be cost effective while spending the limited budgets where there is the most significant potential for savings. For each home in Tier 2, the field auditor uses the National Energy Audit Tool (NEAT) to determine which specific measures are cost effective for that home.

The tier structure is defined as follows:

	<b>Therm / square foot</b>	<b>kWh use/ square foot</b>	<b>Investment Allowed</b>
Tier 1	0 < 1 therm / ft <sup>2</sup>	0 < 7 kWh / ft <sup>2</sup>	Up to \$600
Tier 2	1 + therms / ft <sup>2</sup>	7 + kWh / ft <sup>2</sup>	All SIR* ≥ 1.5 up to \$4K

\*SIR – Savings - Investment Ratio

## **Tier One Services**

57. Tier 1 services are provided to customers by Duke Energy Kentucky, through its subcontractors. Customers are considered Tier 1, if they use less than 1 therm per square foot per year or less than 7 kilowatt hour (kWh) per square foot per year, based on last year's usage (weather adjusted) of Company supplied fuels. Square footage of the dwelling is based on conditioned space only, whether occupied or unoccupied. It does not include unconditioned or semi-conditioned space (non-heated basements). The total program dollars allowed per home for Tier One services is \$600.00 per home. Tier One services are as follows:

- Furnace / Heating system Tune-up & Cleaning;
- Furnace repair up to \$600;
- Venting check & repair;
- Water Heater Wrap;
- Pipe Wrap;
- Cleaning of refrigerator coils;
- Cleaning of dryer vents;
- Energy Efficient Light Bulbs;
- Low-flow shower heads and aerators;
- Weather-stripping doors & windows;
- Limited structural corrections that affect health, safety, and energy up to \$150;  
and
- Energy Education.

## **Tier Two Services**

58. Duke Energy Kentucky will provide Tier Two services to a customer if they use at least 1 therm or at least 7 kWh per square foot per year based on the last year of usage of Duke Energy Kentucky supplied fuels.

Tier Two services are as follows:

- Tier One services; plus
- Additional cost-effective measures (with  $SIR \geq 1.5$ ) based upon the results of the NEAT audit. Through the NEAT audit, the utility can determine if energy saving measures pay for themselves over the life of the measure as determined by a standard heat loss/economic calculation (NEAT audit) utilizing the cost of gas and electric as provided by Duke Energy Kentucky. Such items can include but are not limited to attic insulation, wall insulation, crawl space insulation, floor insulation and sill box insulation. Safety measures applying to the installed technologies can be included within the scope of work considered in the NEAT audit as long as the SIR is greater than 1.5 including the safety changes; and
- Replacement of heating system if cannot be repaired.

Regardless of placement in a specific tier, Duke Energy Kentucky provides energy education to all customers in the program.

59. Refrigerator replacement is also a component of this program. To determine replacement, the program weatherization provider performs a two-hour meter test of the existing refrigerator unit. If it is a high-energy consuming refrigerator, as determined by this test, the unit is replaced. Replacing with a new Energy Star qualified refrigerator, with an estimated annual usage of 400 kWh, results in an overall savings to the average customer typically in excess of

1,000 kWh per year.

Refrigerators tested and replaced:

<b>Year</b>	<b>Refrigerators Tested</b>	<b>Refrigerators Replaced</b>
2002 – 2003	116	47
2003 – 2004	163	73
2004 – 2005	115	39
2005 – 2006	116	52
2006 – 2007	136	72
2007 – 2008	173	85
2008 – 2009	153	66
2009 – 2010	167	92
2010 – 2011	112	76
2011 – 2012	107	64
2012 – 2013	206	69
2013 – 2014	112	37
2014 – 2015	42	24
2015 – 2016	60	22
2016 – 2017	92	54

The existing refrigerator being replaced is removed from the home and destroyed in an environmentally appropriate manner to assure that the units are not used as a second refrigerator in the home or do not end up in the secondary appliance market.



### ***Payment Plus***

60. The Payment Plus portion of Low Income Services program is designed to impact participants' behavior (*e.g.*, encourages utility bill payment and reducing arrearages) and to generate energy conservation impacts. The program includes both the early participants and new participants each year.

The program is made up of three components:

- Energy Education & Budget Counseling – to help customers understand how to control their energy usage and how to manage their household bills, a combined education/counseling approach is used;
- Weatherization – to increase the energy efficiency in customers' homes, participants are required to have their homes weatherized as part of the normal Residential Conservation and Energy Education (low-income weatherization) program unless weatherized in past program years; and
- Bill Assistance – to provide an incentive for these customers to participate in the education and weatherization, and to help them get control of their bills. Payment assistance credits are provided to each customer once they complete each aspects of the program. The credits are: \$200 for participating in the EE counseling, \$150 for participating in the budgeting counseling, and \$150 for participating in the Residential Conservation and Energy Education program (weatherization services). If all of the requirements are completed, a household could receive up to a total of \$500 towards their arrearage. This allows for approximately 200 homes to participate per year. Some customers do not complete all three steps or may have already had weatherization services

completed prior to the program.

61. This program is offered twice over six winter months per year (October-March).

62. Duke Energy Kentucky utilizes a community action agency to recruit customers to participate in the Payment Plus program. Using a list of potential customers provided by Duke Energy Kentucky, the agency removes any customer who has participated in the program in years past and sends a letter describing the program to the remaining customers. Included in this letter are various dates, times, and locations of scheduled classes. The courses are designed to accommodate customers with varied schedules and widespread locations. The customer is asked to contact the agency to register for a course. Make-up courses are also offered to those customers who may have missed their initial scheduled time.

63. For the filing period, 133 participants attended energy education counseling, 105 participants attended budget counseling and 11 participants' homes have been weatherized.

**Program 6: Residential Direct Load Control - Power Manager Program**

64. The purpose of the Power Manager program is to reduce demand by controlling residential air conditioning usage during periods of peak demand, high wholesale price conditions and/or generation emergency conditions during the summer months. It is available to residential customers with central air conditioning. Duke Energy Kentucky attaches a load control device to the outdoor unit of a customer's air conditioner. This enables Duke Energy Kentucky to cycle the customer's air conditioner off and on under appropriate conditions.

65. Customers selecting the option that moderately cycles their air conditioner, receive a \$25 credit at installation. Customers selecting the longer cycling option, receive a \$35 credit at installation.

66. Customers also receive annual credits during the months of May- September

depending on the program they signed-up for. In 2016, customers received the minimal event credit to the first five months of the event season (May - September). Customers on the moderate control received a minimal event credit of \$1.00 per month for each year they were on the program. Customers on the longer cycle option received \$1.60 per month each year they were on the program.

67. Beginning in May 2017, a customer that signed-up for the moderate control option receives an annual, minimal event credit of \$2.40 per month for each year they are on the program and customers that signed-up for the longer control option receive an annual event credit of \$3.60 per month each year they are on the program.

68. Duke Energy Kentucky increased Power Manager marketing efforts beginning in late 2016 and carrying over into 2017 in an effort to get installations completed in early 2017 and meet deadlines for registration with PJM for the 2017-2018 planning year. This led to an increase spend in acquisition, switch purchases and installation costs.

69. Duke Energy Kentucky continues to use load control devices manufactured by Eaton's Cooper Power Systems for new installations and replacement of existing load control devices. The load control devices have built-in safe guards to prevent the "short cycling" of the air-conditioning system. The air-conditioning system will always run the minimum amount of time required by the manufacturer. The cycling simply causes the air-conditioning system to run less, which is no different than what it does on milder days. Additionally, the indoor fan will continue to run and circulate air during the cycling event.

70. The Company continued its primary Power Manager marketing during the past fiscal year through outbound telephone calling. Providing customers with an opportunity to ask questions before deciding to participate has proven to be a significant attribute in making this the

most effective sales channel.

71. In addition, Power Manager was promoted in a spring 2017 email offer. This is a low cost alternative to reach customers and create program awareness.

72. Ongoing measurement and verification (M&V) is conducted through a sample of Power Manager customers with devices that record hourly run-time of the air conditioner unit and with load research interval meters that measure the household kWh usage. Operability studies are also used to measure the performance of Power Manager load control devices in Kentucky. In addition, Duke Energy Kentucky has reviewed the statistical sampling requirements of PJM Interconnection, LLC (PJM) for demand response resources of this type. The Duke Energy Kentucky studies comply with all PJM requirements.

73. There were six Power Manager events that took place from July 2016 through the end of the 2016 event season. There was a PJM required one hour test on September 1, 2016.

74. There were four events in 2017 through the end of July. There was a required one hour PJM test on September 7, 2017. The events on average saved 11 Megawatts per event during peak periods of demand.

75. Duke Energy Kentucky filed to include electric water heaters to the program on August 15, 2016.<sup>13</sup> However in an effort to control overall program costs the program will not be offering electric water heaters to the program at this time.

#### **Program 7: Smart Saver<sup>®</sup> Prescriptive Program**

76. The Smart Saver<sup>®</sup> Non-residential Prescriptive Incentive Program provides incentives to commercial and industrial consumers for installation of high efficiency equipment in applications involving new construction, retrofit, and replacement of failed equipment. The

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<sup>13</sup>See In the Matter of Duke Energy Kentucky, Inc., to Amend its Demand Side Management Programs, Case Number 2016-00289, Application (August 15, 2016).

program also uses incentives to encourage maintenance of existing equipment in order to reduce energy usage. Incentives are provided based on Duke Energy Kentucky's cost effectiveness modeling to assure cost effectiveness over the life of the measure.

77. Commercial and industrial consumers can have significant energy consumption, but may lack knowledge and understanding of the benefits of high efficiency alternatives. The Program provides financial incentives to help reduce the cost differential between standard and high efficiency equipment, offer a quicker return on investment, save money on customers' utility bills that can be reinvested in their business, and foster a cleaner environment. In addition, the Program encourages dealers and distributors (or market providers) to stock and provide these high efficiency alternatives to meet increased demand for the products.

78. The program promotes prescriptive incentives for the following technologies – lighting, HVAC, pumps, variable frequency drives, food services, process equipment, and IT measures. The eligible measures, incentives and requirements for both equipment and customer eligibility are listed in the applications posted on Duke Energy's website for each technology type.

79. The program has developed multiple approaches to reaching the very broad and diverse audience of business customers, consisting of incentive payment applications, with paper and online options, and instant incentives offered through the midstream marketing channel and the Online Energy Savings Store. The 2017 results so far have been strong due to several key factors:

- LED fixture and lamp measures that were added in late 2015 continue to be very popular;
- More applicants are using the online application;

- Midstream marketing channel continues to attract more distributors to the program;
- Outreach continues to support Trade Allies working with the program;
- Targeted marketing reached out to customers and Trade Allies;
- A dedicated team of representatives answer customer questions via phone and email;
- Business energy advisors continue to provide medium businesses with personalized relationships to identify and support new EE projects; and
- Proactive call and email campaigns to close incomplete, pending or aging projects.

80. During the fiscal year of 2016-2017, 518 applications, consisting of 1,325 measures, were paid for Duke Energy Kentucky prescriptive incentives. Application activity was 133% higher than the previous fiscal year. Much of this increase has been attributed to the continued interest in high efficiency LED lighting measures that were added to the program at the end of 2015. During 2016-2017, 46% of applications have been submitted via the new online application portal. The average payment per paid application was \$6,812 (double the average payment per application in the previous period).

81. In 2016-2017, approximately 29% of the Smart Saver<sup>®</sup> impacts were from participation through the midstream marketing channel. The midstream marketing channel provides instant incentives to eligible customers at a participating distributor's point of purchase. Approved midstream distributors validate eligible customers and selected lighting, HVAC, food service and IT products through an online portal, and use that information to show customers the incentive-reduced price of equipment that would provide higher efficiency versus the standard. Upon purchase, the distributor reduces the customer's invoice for eligible equipment by the

amount of the Smart Saver<sup>®</sup> Prescriptive incentive. Distributors then provide the sales information, including validated Duke Energy Kentucky account number, installation address, and products incentivized, to Duke Energy electronically for reimbursement. The incentives offered through the midstream channel are consistent with current program incentive levels. In 2016, Duke Energy launched major improvements to this marketing channel by partnering with the third-party Energy Solutions. Energy Solutions provides the online portal for distributors to manage the paperless validation and incentive application.

82. Duke Energy also offers the Business Savings Store on the Duke Energy website, with orders fulfilled by the third-party EFI. The site provides customers the opportunity to take advantage of a limited number of incentive measures by purchasing qualified products from an on-line store and receiving an instant incentive that reduces the purchase price of the product. The incentives offered in the store are consistent with current program incentive levels. The online application store has been well received by the DIY niche market and allows customer a path for instant incentives without the burden of paperwork.

83. Over the years, the program has worked closely with Trade Allies (TA) to promote the program to our business customers at the critical point in time when customers are considering standard or high efficiency equipment options. The Smart Saver<sup>®</sup> outreach team provides training and technical support to the Trade Ally network. The outreach team also recruits new TAs to participate in the program. TA company names and contact information appears on the TA search tool located on the Smart Saver<sup>®</sup> website. This tool was designed to help customers who do not already work with a TA, to find someone in their location who can serve their needs. The Company continues to look for ways to engage the TAs in promotion of the Program as well as more effective targeting of TAs based on market opportunities.

84. Duke Energy Kentucky continues to evaluate changes to existing measures, to take into consideration changes to market conditions and energy efficiency standards, and the addition of measures in order to offer customers additional options for energy savings. For 2018, measures are currently being evaluated and will be presented to the Commission ten days before going into effect in accordance with Case No. 2014-00280. The total change in measures will not exceed \$75,000.

85. In an effort to increase the number of customers that the Duke Energy Smart Saver<sup>®</sup> program can help and motivate to purchase energy efficient equipment, in 2016 Duke Energy Kentucky increased the incentive cap from 50% to 75%. The maximum incentive that a customer can receive is listed on the application forms.

86. Duke Energy also continues to reach out to those customers who have not yet participated in the Smart Saver<sup>®</sup> program.

87. The Company continues to work with outside consultants and internal resources to develop strategies to understand equipment supply/value chains and increase awareness of these measures going forward.

88. Nonresidential customers are informed of programs via targeted marketing material and communications. Information about incentives is also distributed to TAs, who in turn sell equipment and services to all sizes of nonresidential customers. Large business or assigned accounts are targeted primarily through assigned Duke Energy Kentucky account managers. Accounts that do not have an assigned account manager receive information about the program through direct mail, electronic mail and other direct marketing efforts including outbound call campaigns.

89. The internal marketing channel is comprised of assigned Large Business Account



Managers, Segment Managers, and Local Government and Community Relations, who all identify potential opportunities as well as distribute program collateral and informational material to customers and TAs. In addition, the Economic and Business Development groups also provide a channel to customers who are new to the service territory.

90. The Company has two business energy advisors to the team to perform outreach to unassigned small and medium business customers. The business energy advisors follow up on customer leads to assist with program questions and steer customers to the TA search tool who are not already working with a TA. In addition, the business energy advisors are contacting customers with revenue between \$60,000 and \$250,000 to promote the Smart Saver<sup>®</sup> programs.

**Program 8: Smart Saver<sup>®</sup> Custom Program**

91. The purpose of this program is to encourage the installation of high efficiency equipment in new and existing nonresidential establishments. The program provides incentive payments to offset a portion of the higher cost of energy efficient equipment.

92. Duke Energy Kentucky contracts with a third party to perform technical review of applications as part of implementation of this program. This program is jointly implemented with the Duke Energy Indiana, Duke Energy Ohio, and Duke Energy Carolinas territories to reduce administrative costs and leverage promotion.

93. During the current reporting period of July 2016 through June 2017, the Kentucky Smart Saver<sup>®</sup> Custom Incentive program provided incentives totaling \$358,892 to approximately 12 customers. While the number of customers participating is similar to previous reporting periods, the level of participation in terms of incentives and impacts has increased considerably. High levels of participation and incentives have continued since the end of the period (June 2017) and are anticipated to continue at a high level during the next fiscal period (July 2017

through June 2018).

94. This high level of participation is being driven primarily by high customer interest in LED lighting upgrades as well as industrial process upgrade projects. This resulted in the program exceeding filed costs by approximately 16%, while surpassing filed impact goals by 44%. The program has insight into a pipeline of future customer projects and has submitted an amendment filing requesting additional program funding due to the sustained increase in participation. This funding is needed in order to meet the program's anticipated incentive obligations.

95. Upon receiving a Custom Incentive application, Duke Energy Kentucky reviews the application and performs a technical evaluation as necessary to validate energy savings. Measures submitted by the customer are then modeled to ensure cost effectiveness to the program overall, given the energy savings, and improves a customer's payback to move them to invest in energy efficiency. Third party evaluation follow-up and review includes application review, site visits and/or onsite metering and verification of baseline energy consumption, customer interviews, and/or use of loggers/sub-meters.

96. Duke Energy Kentucky has launched a "Fast Track" application path in other jurisdictions as well as "Calculation Assistance" which provides customer assistance in calculating energy savings for potential projects. "Fast Track" involves a streamlined custom application path which enables participation of customer projects that are on short schedules while "Calculation Assistance" provides interested customers with a qualified third party to calculate energy savings required for successful participation in the program. Due to local market considerations, both enhancements will roll out to Duke Energy Kentucky customers in coordination with Duke Energy Ohio customers.

### **Program 9: Smart Saver<sup>®</sup> Energy Assessments Program**

97. The purpose of this program is to assist customers with the evaluation of energy usage within a specific building(s) and to provide recommendations for energy savings projects. The program may provide up to a 50% subsidy for an energy efficiency audit completed in partnership with a Duke Energy contracted professional engineering organization or a third-party engineering firm of the customer's choice. This program is jointly implemented within the Duke Energy Indiana, Duke Energy Ohio, and Duke Energy Carolinas territories to reduce administrative costs and leverage resources.

98. Various types of assessments are offered and tailored to the customer's needs as well as the type and complexity of the facility to be audited. The standard assessment offered mirrors the ASHRAE (American Society of Heating, Refrigeration, and Air-Conditioning Engineers) Level II energy audit criteria. Additionally, ASHRAE Level III assessments (Investment Grade) are also offered when warranted. Other varieties of assessments are available that focus on specific types of buildings or systems. Examples include critical facilities assessments (data centers, labs, and hospitals), compressed air assessments, refrigeration system assessments, and chilled water assessments.

99. There are two main customer deliverables for all assessments. The first is an energy report complete with details on how energy is being used and how efficiently the energy infrastructure operates. The report provides Energy Conservation Measures (ECM) that recommends specific projects that can save energy. Each ECM includes estimated energy savings, estimated cost to implement, and estimated payback period. The second deliverable provided by the assessment is the engineering data that is collected and can be utilized to support a Smart Saver<sup>®</sup> Prescriptive or Smart Saver<sup>®</sup> Custom Incentive application. The Duke Energy

contracted professional engineering firm or selected third-party firm will assist the customer in completing the Smart Saver<sup>®</sup> application.

100. During the current reporting period, July 2016 to June 2017, there is currently one customer participating and one customer considering participation in the program.

**Program 10: Peak Load Manager (Rider PLM) - PowerShare<sup>®</sup> Program**

101. PowerShare<sup>®</sup> is the brand name given to Duke Energy Kentucky's Peak Load Management Program (Rider PLM, Peak Load Management Program KY.P.S.C. Electric No. 2, Sheet No. 77). Rider PLM was approved pursuant as part of the settlement agreement in Case No. 2006-00172. In the Commission's Order in Case No. 2006-00426, approval was given to include the PowerShare<sup>®</sup> program within the DSM programs. The PLM program is voluntary and offers customers the opportunity to reduce their electric costs by managing their electric usage during the Company's peak load periods. Customers and the Company will enter into a service agreement under Rider PLM, specifying the terms and conditions under which the customer agrees to reduce usage. There are two product options offered for PowerShare<sup>®</sup> - CallOption<sup>®</sup> and QuoteOption<sup>®</sup>:

- CallOption<sup>®</sup>:
  - A customer served under a CallOption<sup>®</sup> product agrees, upon notification by the Company, to reduce its demand;
  - Each time the Company exercises its option under the agreement, the Company will provide the customer a credit for the energy reduced;
  - For the 2016/2017 program year, there was one type of event;
    - Emergency events are implemented due to reliability concerns. Participants are required to curtail during emergency events.

- In addition to the energy credit, customers on the CallOption<sup>®</sup> will receive an option premium credit;
- For the 2016/17 PowerShare<sup>®</sup> programs associated with the fiscal year of this filing, there were three enrollment choices for customers relative to CallOption. The first choice, “Summer Only”, required participants to be able to curtail during the months of June thru September 2016, with a maximum event length of 6 hours and maximum number of curtailments of 10 during the program year. The second choice, “Extended Summer”, required participants to be able to curtail during the months of June through October 2016 plus May 2017, with a maximum event length of 10 hours and no maximum number of curtailment events. The third choice, “Annual”, requires participants to be able to curtail during the full contract term of June 2016 through May 2017, with a maximum event length of 10 hours and no maximum number of curtailment events.
- Only customers able to provide a minimum of 100 kW load response qualify for CallOption<sup>®</sup>.
- QuoteOption<sup>®</sup> :
  - Under the QuoteOption<sup>®</sup> products, the customer and the Company agree that when the average wholesale market price for energy during the notification period is greater than a pre-determined strike price, the Company may notify the customer of a QuoteOption<sup>®</sup> event and provide a price quote to the customer for each event hour;
  - The customer will decide whether to reduce demand during the event

period. If they decide to do so, the customer will notify the Company and provide an estimate of the customer's projected load reduction;

- Each time the Company exercises the option, the Company will provide the participating customer who reduces load an energy credit;
- There is no option premium for the QuoteOption<sup>®</sup> product since customer load reductions are voluntary; and
- Only customers able to provide a minimum of 100 kW load response qualify for QuoteOption<sup>®</sup>.

#### **PowerShare<sup>®</sup> 2016-2017 Summary**

102. Duke Energy Kentucky's customer participation goal for 2016 was to retain all customers that currently participate and to promote customer migration to the CallOption<sup>®</sup> program. The table below displays monthly account participation levels for July 2016 through June 2017, as well as MWs enrolled in the program.

<b>Kentucky PowerShare® Participation Update</b>				
<b>Month</b>	<b>CallOption®</b>		<b>QuoteOption®</b>	
	<b>Enrolled Customers*</b>	<b>Summer Capability**</b>	<b>Enrolled Customers*</b>	<b>Summer Capability**</b>
Jul-16	14	16.27	0	0
Aug-16	14	16.27	0	0
Sep-16	14	16.27	0	0
Oct-16	14	16.27	0	0
Nov-16	14	16.27	0	0
Dec-16	14	16.27	0	0
Jan-17	14	16.27	0	0
Feb-17	14	16.27	0	0
Mar-17	14	16.27	0	0
Apr-17	14	16.27	0	0
May-17	14	16.27	0	0
Jun-17	14	16.95***	0	0

\*Enrolled Customers represents the number of parent accounts participating.

\*\*Summer Capability is consistent with the associated program year. Numbers reported are adjusted for losses.

\*\*\* Estimated Summer capability

(Note that Duke Energy Kentucky has signed 14 contracts for the 2017/2018 PowerShare® CallOption.® Measured and verified MW values for the summer of 2017 will be available and presented in next year's update filing.)

103. During the July 2016 through June 2017 period, there were zero PowerShare® events for economic or emergency reasons. However, there were curtailment tests performed to meet PJM requirements. The table below summarizes event participation.

**Duke Energy Kentucky - PowerShare CallOption and QuoteOption  
Economic, Emergency, and Test Events  
July 2016 - June 2017 Activity - Reduction Values in MWs**

Date	Event Hours (EDT)	Event Type	Event Participants	Participants Reducing Load Partially or Fully	Average Hourly Load Reduction Expected - At the Meter	Average Hourly Load Reduction - At the Meter	Average Hourly Load Reduction - At the Plant
9/1/2016	4 pm to 5 pm	PJM Test	14	14	16.87	18.78	19.75
9/13/2016	4 pm to 5 pm	PJM Re-Test	1	1	0.13	0.12	0.13
9/21/2016	4 pm to 5 pm	PJM Re-Test	1	1	1.23	0.62	0.65
9/30/2016	4 pm to 5 pm	PJM Re-Test	1	1	0.89	0.74	0.78

\* PJM Test Event

# PJM Re-test Event

(Note that for the summer period of June 2017 through August 2017, zero PowerShare® events have been called. The annual, required, PJM test event was conducted on September 1, 2017 at 4 pm. Information on these events will be available and presented in next year's update filing.)

**Program 11: Low Income Neighborhood Program**

104. The Duke Energy Kentucky Residential Neighborhood Program takes a non-traditional approach to serving income-qualified areas of the Duke Energy Kentucky service territory by directly installing energy efficiency measures in customer homes. The program engages targeted customers with personal interaction in a familiar setting while ultimately reducing energy consumption by installing energy efficient measures and educating customers on ways to manage and lower their energy bills. Examples of direct installed measures include energy efficient bulbs, water heater and pipe wrap, low flow shower heads/faucet aerators, window and door air sealing and a year supply of HVAC filter replacements. Targeted low income neighborhoods qualify for the program if at least 50% of the households are at or below 200% of the federal poverty guidelines. Duke Energy Kentucky analyzes census and internal data to select and prioritize neighborhoods that



have the greatest need and propensity to participate. While the goal is to serve neighborhoods where the majority of residents are low income, the program is available to all Duke Energy Kentucky customers within the selected boundary. This program is available to both homeowners and renters occupying single family and multi-family dwellings in the target neighborhoods that have electric service provided by Duke Energy Kentucky.

105. A community-based kick-off event is held in targeted neighborhoods. The kick-off events feature local community leaders, community organizations, weatherization companies, vendor and technical crew. The program manager and vendor provide attendees detailed information on program components and neighborhood schedule. The purpose of the kick-off event is to rally the neighborhood around energy efficiency and educate customers on steps that will contribute to lowering their energy bills. Additionally, attendees have the opportunity to meet technical staff and view measures. Following the kick-off event, customers receive in-home energy assessments (walk-through) and the appropriate energy saving measures are installed if the customer elects to have the work completed. Direct mail and call center support supplement community based outreach.

106. For fiscal year 2016-2017, with a participation goal of 600 homes we have completed 689 homes in Duke Energy Kentucky's territory. Services have been completed in neighborhoods located in Newport and Covington. Duke Energy Kentucky has collaborated with the Northern Kentucky Community Action Commission, the Kentucky Housing Authority and other local businesses to rally around our efforts. The program provides residents information about the program and capitalizes on additional services available in their communities. The program has been well received and neighbors are sharing their experience with others, which has produced additional assessments and a 74 percent participation in our latest neighborhood in Covington.

Starting with the next neighborhood, the program will be including LED lighting and refrigerator and freezer thermometers.

**Program 12: My Home Energy Report Program**

107. The My Home Energy Report (MyHER Report) compares household electric usage to similar, neighboring homes, and provides recommendations and actionable tips to lower energy consumption. The report also informs a customer of the Company's other energy efficiency programs when applicable. These normative comparisons are intended to induce customers to adopt more efficient energy consumption behavior. The MyHER Report will be delivered in printed or online form to targeted customers with desirable characteristics who are likely to respond to the information. The printed reports are distributed up to 12 times per year; however delivery may be interrupted during the off-peak energy usage months in the fall and spring. Currently to qualify to receive the MyHER Report, customers must be living in a single metered, single family home with 13 months usage history.

108. The MyHER program is an opt out program and the Company provides information on every report as to how a customer may request to stop receiving the reports. Since the program began in September 2012, only 144 customers (26 in this reporting timeframe) out of roughly 56,000 KY customers participating in the program have chosen to opt out.

109. The Company has designed an interactive portal and enabled email technology to further engage with customers with the intention of increasing the level of engagement with customers and hence their efficiency. This portal is available online and through mobile channels. The portal was rolled out in March 2015 with a small email campaign for MyHER customers for whom we have an email address. As of June 30, 2017, there were 1,091 Kentucky

MyHER customers enrolled in the portal.

110. The Company has developed a MyHER program for multifamily dwellings that was available in January 2017.

111. The Company tested an element of the report targeted at reducing peak demand. This new targeted messaging intended to reduce peak demand uses day-ahead customer notification and a customized post-event home energy email in order to encourage energy demand savings through the principles of social norming. The Company learned several valuable lessons about how to design this type of element in the program which would inform any later decisions to test this element in the future. However, the test results did not show a statistically significant reduction in peak demand use and therefore was not implemented as a regular part of the program.

112. The Company is developing a dual fuel report for Duke Energy Kentucky customers who receive electricity and gas from the Company. This report is targeted to be available in early 2018. The Company rolled out a new and improved design of the report including a view of disaggregated usage in Q3 2017.

### **Program 13: Small Business Energy Saver Program**

113. The purpose of Duke Energy's Small Business Energy Saver program (SBES Program) is to reduce energy usage through the direct installation of energy efficiency measures within qualifying small non-residential Duke Energy Kentucky customer facilities. All aspects of the SBES Program are administered by a single Company-authorized vendor. The SBES Program measures address major end-uses in lighting, refrigeration, and HVAC applications.

114. The SBES Program participants receive a free, no-obligation energy assessment of their facility followed by a recommendation of energy efficiency measures to be installed in

their facility along with the projected energy savings, costs of all materials and installation, and up-front incentive amount from Duke Energy Kentucky. Upon receiving the results of the energy assessment, if the customer decides to move forward with the proposed energy efficiency project, the customer makes the final determination of which measures will be installed. The energy efficiency measure installation is then scheduled at a convenient time for the customer and the measures are installed by electrical subcontractors of the Duke Energy-authorized vendor.

115. The SBES Program is designed as a pay-for-performance offering, meaning that the Duke Energy-authorized vendor administering the SBES Program is only compensated for kWh energy savings produced through the installation of energy efficiency measures.

116. The SBES Program is available to existing Duke Energy Kentucky non-residential customer accounts with an actual average annual electric demand of 180 kW or less. An individual business entity's participation is limited to no more than five premises on the Company's system during a calendar year.

117. The SBES Program launched in late February 2015, after receiving the Order of Approval from the Kentucky Public Service Commission on January 28, 2015.<sup>14</sup> SmartWatt Energy Inc. (SmartWatt), a company that specializes in administering utility energy efficiency programs nationwide similar to Small Business Energy Saver, was awarded the contract to administer the Program in the Duke Energy Ohio & Kentucky territories after a lengthy competitive bid and vendor evaluation process.

118. The July 2016 to June 2017 period was the second full fiscal year in which the SBES program has been in operation in Kentucky, and the Company's small business customers

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<sup>14</sup> Case No. 2014-00280

continued to show strong interest in the Program, with a total of 170 SBES projects being completed during the period.

119. Program management, in collaboration with Program vendor SmartWatt Energy, implemented several process improvements and initiatives in 2017 with the aim of enhancing the Program's customer experience and improving customer satisfaction.

120. While LED lighting measures are expected to remain the primary driver of kWh savings in the Program for the foreseeable future, it is encouraging to see that refrigeration measures continue to increase in participation. HVAC measures, however, continue to struggle due to the kWh savings-based incentive structure, long payback periods and high measure cost to savings ratio. However, Program management is working with the vendor to place more focus on offering programmable Wi-Fi enabled thermostats, which were added to the Program as an incentivized measure in 2016.

121. Duke Energy Kentucky will continue to evaluate the opportunity to add incentivized measures suitable for the small business market to the approved Program which fit the direct install program model. The Company would ultimately like to ensure that small business customers are given the opportunity to maximize their energy savings by being offered a comprehensive energy efficiency project through the SBES Program wherever possible.

### **New Program Updates<sup>15</sup>**

#### **Program 14. Smart Saver<sup>®</sup> Non-Residential Performance Incentive Program (Formerly filed as Pay for Performance)**

122. Duke Energy Kentucky received approval of this non-residential program: Smart Saver<sup>®</sup> Non-Residential Performance Incentive Program in Case No 2016-00289. The purpose

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<sup>15</sup> Programs approved in Case Number 2016-00289

of this program is to encourage the installation of high efficiency equipment in new and existing non-residential establishments. The Program will provide incentive payments to offset a portion of the higher cost of energy efficient installations that are not offered under either the Smart Saver<sup>®</sup> Prescriptive or Custom programs. The types of measures covered by the Program include retro-commissioning and projects with some combination of unknown building conditions or system constraints, coupled with uncertain operating, occupancy, or production schedules. The specific type of measures are included in the contract with the Customer.

123. During the filing period of the fiscal year 2016-2017, the Performance Incentive program was approved to launch in Duke Energy Kentucky, and plans to market the program were in place. However, the Company has not been actively marketing the program due to the high success of our Prescriptive and Custom programs. The result was a lack of participation during this filing period.

**Program 15. Power Manager<sup>®</sup> for Apartments**

124. Power Manager<sup>®</sup> for Apartments is a residential load control program focused on Apartment Complexes/Communities. It is used to reduce electricity demand by controlling residential air conditioners and when available, electric water heaters during periods of peak demands. A load control device is attached to the outdoor air conditioning unit and water heater of participating customers. This enables Duke Energy Kentucky to cycle central air conditioning systems off and on when the load on Duke Energy Kentucky's system reaches peak levels during the cooling season. In addition, this program enables Duke Energy Kentucky to cycle the electric water heaters off when the load on the system reaches peak levels—any time of year.

125. Duke Energy Kentucky received approval to offer this program however realizing the IT investment relative to the small impacts and the overall desire to control overall program

costs the Company has decided not to offer the program. Program spending during the July 2016 – June 2017 timeframe were costs of specifying the information technology project to implement the program changes to the billing system, as well as, some equipment purchases in anticipation of launching the program.

**Program 16. Power Manager<sup>®</sup> for Business**

126. Power Manager<sup>®</sup> for Business is a non-residential program that provides business customers with the opportunity to participate in demand response, earn incentives and realize optional energy efficiency benefits. This program is designed as a flexible offer that provides small-to-medium size business customers with options on device types as well as level of demand response participation. Customers first select the type of device from two available options: thermostat or switch.

127. Customers who opt for the thermostat will have the ability to manage their thermostat remotely via computer, tablet or smartphone. The thermostat comes with presets designed to help the business manager/owner set an efficient schedule that works for their business. This realizes additional benefits in the form of EE impacts/savings. Customers then select one of three levels of summer demand response (DR) participation, and earn an incentive based upon that selection.

128. Both thermostat and switch customers have the same DR participation options, and receive the same DR incentives.

129. Power Manager<sup>®</sup> for Business will be offered to business customers with qualifying air conditioning systems, summer weekday energy usage and broadband/Wi-Fi internet. Customers must agree to have the control device installed on their A/C system and to allow Duke Energy Kentucky to control their A/C system during Power Manager<sup>®</sup> events.

Qualifying air conditioning systems include:

- Individual split air conditioning systems;
- Rooftop Units; and
- Packaged terminal air conditioners (PTACs).

Customers participating in this Program receive an incentive based on upon the level of demand response cycling they select:

- 30% cycling: \$50 per DR summer season (per device);
- 50% cycling: \$85 per DR summer season (per device); or
- 75% cycling: \$135 per DR summer season (per device).

The incentive will be paid out after installation of the device(s) and then annually. Devices are installed at the customer premise at no charge to the customer.

130. Power Manager<sup>®</sup> for Business will be marketed through targeted direct mail campaigns, targeted e-mail campaigns, outbound telemarketing, on Duke Energy Kentucky's Web site and via cross selling with the Small Business Energy Saver Program.

131. Customers can enroll in Power Manager<sup>®</sup> for Business by: phone call, returning the enrollment form included in the marketing material or through Duke Energy Kentucky's web site. Duke Energy Kentucky will contract with a third-party entity to install and perform field work associated with the load control devices and thermostats.

132. Due to the timely approval of this program in 2017, Duke Energy Kentucky was able to get a faster start on the billing system changes needed to implement this program than had been anticipated. This resulted in some "overspend" during the July 2016 to June 2017 timeframe, but means that the program became available for customers in July 2017 and information technology expenditures that had been budgeted for the 2017-18 program year were



primarily spent in the previous timeframe.

### **Evaluation, Measurement, and Verification**

133. The evaluation, measurement, and verification (EM&V) schedule for each program for program years 2017 – 2019 is available in Appendix E.

### **Calculation of the 2017 DSM Cost Recovery Mechanism, Rider DSMR**

134. The reconciliation of the cost recovery mechanism (Rider DSMR) involves a comparison of projected versus actual program expenses, lost revenues, and shared savings, as well as inclusion of the prior year's reconciliation. The actual cost of residential and non-residential program expenditures, lost revenues, and shared savings for this reporting period was \$19.23 million. The projected level of program expenditures was \$13.68 million. The primary driver of the variance in projections versus the actual costs was due to a higher than expected participation for the Non-Residential Smart Saver<sup>®</sup> Prescriptive lighting program.

135. Lost revenues are computed using the applicable marginal block rate net of fuel costs and other variable costs times the estimated kWh savings for a three-year period from installation of the DSM measure. The estimate of kWh savings is based upon the results from any recently completed impact evaluation studies and actual customer participation. Lost revenues accumulate over a three-year period from the installation of each measure, unless a general rate case has occurred.

136. With respect to shared savings, Duke Energy Kentucky utilized the shared incentive of 10% of the total savings net of the costs of measures, incentives to customers, marketing, impact evaluation, and administration. The savings are estimated by multiplying the program spending times the Utility Cost Test (UCT) value and then subtracting the program costs. Shared savings are only valued for installation of new DSM measures.

### **Home Energy Assistance Program**

137. The Company is also offering the Home Energy Assistance (HEA) Program as recently approved by the Commission in its June 4, 2014 Order in Case No. 2014-0094 and approved to continue for a three year period through December 31, 2017. On June 21, 2017 the program received approval to continue through December 31, 2020.<sup>16</sup> The program reconciliation is in this application in Appendix B. This program was implemented and began collecting funds in November of 2008. During the term of the current reporting period, a total of \$258,401 was collected from Duke Energy Kentucky customers (\$150,012 electric and \$108,389 gas) from July 2016 - June of 2017. For this reporting period, the HEA program provided assistance to approximately 1,410 customers. The total disbursement between electric and gas accounts was approximately \$178,532 (electric) and \$128,996 (gas) based on the number of electric and gas customers contributing to the fund. These funds are distributed throughout the year by Northern Kentucky Community Action Commission to assist low income customers' energy bill payments. The administrative costs for this period (2016-2017) totaled \$40,112.<sup>17</sup>

### **2017 DSM Riders**

138. Duke Energy Kentucky submits the proposed adjustments to its Rider DSMR for both electric and gas programs (Appendices C and D respectively). The two Rider DSMRs are intended to recover projected July 1, 2018 – June 30, 2019<sup>18</sup> (2019) program costs, lost revenues and shared savings and to reconcile the actual DSM revenue requirement, as previously defined, to the revenue recovered under the riders for the period July 1, 2016 through June 30, 2017. The spreadsheet model contained in Appendix B has been used by the Company for a number of

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<sup>16</sup> Case No. 2017-00189

<sup>17</sup> Administrative costs are based on funds distributed.

<sup>18</sup> The projected July 1, 2017 – June 30, 2018 program expenditures used in this filing will be trued-up as part of the 2018 annual status report and will be described as 2018 throughout the document.

years in its Rider DSMR update filings.

139. Appendix B, page 1 of 7, tabulates the reconciliation of the DSM revenue requirement associated with the prior reconciliation, Duke Energy Kentucky's program costs, lost revenues, and shared savings between July 1, 2016 and June 30, 2017, and the revenues collected through the DSMR Riders over the same period. The true-up adjustment is based upon the difference between the actual DSM revenue requirement and the revenues collected during the period July 1, 2016 through June 30, 2017.

140. The DSM revenue requirement for the period July 1, 2016 through June 30, 2017 consists of: (1) program expenditures, lost revenues, and shared savings; and (2) amounts approved for recovery in the previous reconciliation filing.

141. Appendix B, page 6 of 7, contains the calculation of the 2016 – 2017 residential cost allocation factors for gas and electric, as approved in Case No. 2014-00388. These factors are the Electric Percent of Total Percent of Sales, and the Gas Percent of Total Percent of Sales, and are calculated by program. The calculation includes the residential kWh and ccf sales for July 2016 – June 2017, along with the kWh and ccf savings achieved for July 2016 – June 2017. The factors are used in Appendix B, page 1 of 7, columns 5 and 6.

142. Appendix B, page 7 of 7, contains the calculation of the 2018 – 2019 residential cost allocation factors for gas and electric, as approved in Case No. 2014-00388. These factors are the Electric Percent of Total Percent of Sales, and the Gas Percent of Total Percent of Sales, and are calculated by program. The calculation includes the projected Rate RS kWh and ccf sales found in Appendix B, page 4 of 7, along with the projected kWh and ccf savings for July 2018 – June 2019. The factors are used in Appendix B, page 2 of 7, Residential Program Summary, columns G and H (Allocations of Costs).

143. Appendix B, page 5 of 7 contains the calculation of the 2017 Residential DSMR Riders. The calculation includes the reconciliation adjustments calculated in Appendix B, page 1 of 7 and the Residential DSM revenue requirement for 2019. The Projected Residential DSM revenue requirement for 2019 includes the costs associated with the Residential DSM programs: Energy Efficiency Education Program for Schools, My Home Energy Report, Low Income Neighborhood, Low Income Services, Residential Energy Assessments, Residential Smart Saver<sup>®</sup>, Power Manager<sup>®</sup>, and any applicable net lost revenues and shared savings (Appendix B, pages 2<sup>19</sup> and 3 of 7). Total revenue requirements are incorporated along with the projected electric and gas volumes (Appendix B, page 4 of 7) in the calculation of the Residential DSM Rider.

144. Appendix B, page 5 of 7 also contains the calculation of the 2017 Commercial and Industrial DSM Rider. The calculation includes the reconciliation adjustments calculated in Appendix B, page 1 of 7 and the DSM revenue requirement for 2019. The Commercial & Industrial DSM revenue requirement for 2019 includes the costs associated with the Commercial and Industrial DSM programs: Smart Saver<sup>®</sup> Custom, Smart Saver<sup>®</sup> Prescriptive, Small Business Energy Saver<sup>20</sup>, Smart Saver<sup>®</sup> Non-Residential Performance Incentive Program, PowerShare<sup>®</sup>, Power Manager<sup>®</sup> for Business and the associated net lost revenues and shared savings (Appendix B, pages 2<sup>21</sup> and 3 of 7). The 2017 Commercial and Industrial DSMR Rider is calculated in two parts. One part (Part A) is based upon the revenue requirements for Smart Saver<sup>®</sup> Custom, Smart Saver<sup>®</sup> Prescriptive, Small Business Energy Saver, Smart Saver<sup>®</sup> Non-Residential Performance Incentive Program, Power Manager<sup>®</sup> for Business and PowerShare<sup>®</sup>. This part is only recovered from all non-residential rate classes except rate TT. The other part (Part B) is based upon the

<sup>19</sup> The DSM revenue requirement for 2018 also includes programs and measures approved in Case Number 2016-00289.

<sup>20</sup> As filed for approval in Case No. 2014-00280

<sup>21</sup> The DSM revenue requirement for 2018 also includes programs and measures approved in Case Number 2016-00289.

revenue requirements for the PowerShare<sup>®</sup> program and is recovered from all non-residential rate classes including rate TT.

145. Total revenue requirements are incorporated along with the projected electric volumes (Appendix B, page 4 of 7) in the calculation of the Commercial and Industrial DSM Rider.

146. The Company's proposed DSMR Riders, shown as Appendices C and D, replace the current DSMR Riders, which were implemented in the first billing cycle of May 2017. The electric DSMR rider, proposed to be effective with the first billing cycle in the month following Commission approval, is applicable to service provided under Duke Energy Kentucky's electric service tariffs as follows:

- Residential Electric Service provided under:
  - Rate RS, Residential Service, Sheet No. 30.
- Non-Residential Electric Service provided under:
  - Rate DS, Service at Secondary Distribution Voltage, Sheet No. 40;
  - Rate DT, Time-of-Day Rate for Service at Distribution Voltage, Sheet No. 41;
  - Rate EH, Optional Rate for Electric Space Heating, Sheet No. 42;
  - Rate SP, Seasonal Sports, Sheet No. 43;
  - Rate GS-FL, Optional Unmetered General Service Rate for Small Fixed Loads, Sheet No. 44;
  - Rate DP, Service at Primary Distribution Voltage, Sheet No. 45;
  - Rate RTP-M, Real Time Pricing – Market-Based Pricing, Sheet No. 59;

- Rate RTP, Experimental Real Time Pricing Program, Sheet No. 99; and
- Rate TT, Service at Transmission Voltage, Sheet No. 51.

The gas DSM rider is applicable to service provided under the following residential gas service tariff:

- Rate RS, Residential Service, Sheet No. 30

#### **Calculation of the Residential Charge**

147. The proposed residential charge per kWh for 2017 was calculated by dividing the sum of: (1) the reconciliation amount calculated in Appendix B, page 1 of 7; and (2) the DSM revenue requirement associated with the DSM programs projected for 2019, by the projected sales for calendar year 2018. DSM program costs for 2019 include the total implementation costs plus program rebates, lost revenues, and shared savings. The calculations in support of the residential recovery mechanism are provided in Appendix B, page 5 of 7. Based on the updated rider amounts, the estimated annual cost for the average residential customer would be a charge of approximately \$44.81, a decrease of approximately \$50 from the current rates for electric, and a refund of about \$24.67 for gas.<sup>22</sup> The estimated average annual cost for gas per customer decreased due to an over collection for gas of approximately \$2.7 million.

#### **Calculation of the Non-Residential Charge**

148. The proposed non-residential charge per kWh for 2017 was calculated in two parts. The first part (Part A), applicable to all non-residential rate classes except Rate TT, is calculated by dividing the sum of: (1) the reconciliation amount calculated in Appendix B, page 1 of 7; and (2)

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<sup>22</sup> The cost for average customer was calculated by using the 2018 forecasted sales of Appendix B page 4 divided by the number of residential electric or gas customers multiplied by the cost per kWh or cost per CCF respectively of Appendix B page 5. The costs are estimates and will vary by customer based on usage.

the DSM revenue requirement associated with the Smart Saver<sup>®</sup> Custom, Smart Saver<sup>®</sup> Prescriptive, Small Business Energy Saver, Smart Saver<sup>®</sup> Non-Residential Performance Incentive Program, and Power Manager<sup>®</sup> for Business programs projected for 2019, by the respective projected sales for calendar year 2018. The second part (Part B), applicable to all non-residential rate classes including Rate TT, is calculated by dividing the DSM revenue requirement associated with the PowerShare<sup>®</sup> program projected for 2019, by total non-residential projected sales for calendar year 2018. DSM program cost for 2019 includes the total implementation costs plus program rebates, lost revenues and shared savings.

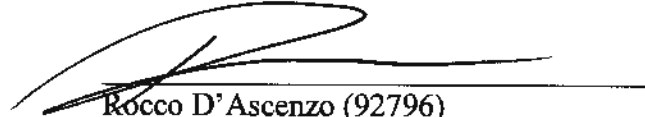
149. The rider applicable to all non-residential rate classes except Rate TT is the sum of Part A and Part B. The rider applicable to all non-residential rate classes including Rate TT is only Part B.

#### **Allocation of the DSM Revenue Requirement**

150. As required by KRS 278.285(3), the DSM Cost Recovery Mechanism attributes the costs to be recovered to the respective class that benefits from the programs. The costs for the Power Manager program are fully allocated to the residential electric class, since this is the class benefiting from the implementation of the program. As required, qualifying industrial customers are permitted to “opt-out” of participation in, and payment for, Smart Saver<sup>®</sup> Custom and Smart Saver<sup>®</sup> Prescriptive, Small Business Energy Saver, Smart Saver<sup>®</sup> Non-Residential Performance Incentive Program and Power Manager<sup>®</sup> for Business. All of Duke Energy Kentucky’s Rate TT customers met the “opt-out” requirements prior to the implementation of the DSM riders in May 1996, and are not subject to this portion of the DSM Cost Recovery Mechanism (*i.e.* Rider DSMR). However, all non-residential customers, including Rate TT customers, will be charged for the PowerShare<sup>®</sup> program.

**WHEREFORE**, Duke Energy Kentucky respectfully requests that the Commission review and approve this Application and Duke Energy Kentucky gives notice that the new rates will take effect 30 days from the date of this Application.

Respectfully submitted,



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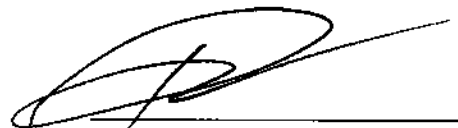
**CERTIFICATE OF SERVICE**

I hereby certify that a copy of the foregoing filing was served on the following via overnight mail, this 15<sup>th</sup> day of November, 2017:

Kent Chandler  
The Office of the Attorney General  
Utility Intervention and Rate Division  
700 Capital Avenue, Suite 20  
Frankfort, Kentucky 40601-8204

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Rocco O. D'Ascenzo

## Appendix A Cost Effectiveness Test Results

Program Name		UCT	TRC	RIM	PCT
<b>Residential Programs</b>					
Appliance Recycling Program	1	NA	NA	NA	NA
Energy Efficiency Education Program for Schools		1.84	2.27	1.03	
Low Income Neighborhood		1.00	3.42	0.71	
Low Income Services		0.72	0.99	0.55	
My Home Energy Report		2.95	2.95	1.34	
Residential Energy Assessments		2.57	2.97	1.21	
Residential Smart \$aver®		3.70	4.58	1.29	6.01
Power Manager®		2.86	3.50	2.86	
Power Manager® for Apartments	1	NA	NA	NA	NA
<b>Total</b>		<b>2.90</b>	<b>3.62</b>	<b>1.33</b>	<b>7.53</b>
<b>Non-Residential Programs</b>					
Power Manager® for Business	1	NA	NA	NA	NA
PowerShare®		3.74	13.66	3.74	
Small Business Energy Saver		5.08	2.93	1.64	2.61
Smart \$aver® Non-Residential Performance Incentive Program	1	NA	NA	NA	NA
Smart \$aver® Custom		7.71	2.65	1.50	2.74
Smart \$aver® Prescriptive - Energy Star Food Service Products		2.99	2.06	1.22	3.48
Smart \$aver® Prescriptive - HVAC		2.56	1.13	1.36	0.85
Smart \$aver® Prescriptive - Lighting		3.25	1.63	1.35	1.51
Smart \$aver® Prescriptive - Motors/Pumps/VFD		2.48	1.67	1.11	2.63
Smart \$aver® Prescriptive - Process Equipment		6.98	5.72	1.87	6.04
Smart \$aver® Prescriptive - IT	1	NA	NA	NA	NA
<b>Total</b>		<b>3.67</b>	<b>1.97</b>	<b>1.48</b>	<b>1.70</b>
<b>Overall Portfolio Total</b>		<b>3.39</b>	<b>2.30</b>	<b>1.43</b>	<b>2.17</b>

1 - NA is not applicable due to no participation in the program

Kentucky DSM Rider

Comparison of Revenue Requirement to Rider Recovery

Residential Programs	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Projected Program Costs 7/2016 to 6/2017 (A)	Projected Lost Revenues 7/2016 to 6/2017 (A)	Projected Shared Savings 7/2016 to 6/2017 (A)	Program Expenditures 7/2016 to 6/2017 (B)	Lost Revenues Gas	Shared Savings Electric	Lost Revenues 7/2016 to 6/2017 (B)	Shared Savings 7/2016 to 6/2017 (B)	2016 Gas (D)	Reconciliation Electric (E)	Rider Collection (F) Gas	Rider Collection (F) Electric	(Over)/Under Gas (G)	(Over)/Under Electric (H)
Appliance Recycling Program	\$ 103,824	\$ 53,618	\$ 1,578	\$ (18,937)	-	\$ (19,837.25)	\$ 37,185	\$ 2,013						
Energy Efficiency Education Program for Schools	\$ 289,560	\$ 75,050	\$ 121,340	\$ 263,440	\$ 71,487	\$ 211,942.30	\$ 65,697	\$ 17,407						
Low Income Neighborhood	\$ 277,803	\$ 94,535	\$ (14,665)	\$ 241,430	-	\$ 241,430.03	\$ 60,861	\$ 114						
Low Income Services	\$ 687,034	\$ 62,303	\$ (18,490)	\$ 489,305	\$ 225,672	\$ 263,632.34	\$ 43,396	\$ (387)						
My Home Energy Report	\$ 754,887	\$ 308,416	\$ 99,095	\$ 547,888	-	\$ 547,887.87	\$ 675,490	\$ 108,630						
Residential Energy Assessments	\$ 261,950	\$ 60,228	\$ 27,065	\$ 224,209	-	\$ 224,209.38	\$ 84,989	\$ 36,211						
Residential Smart Saver®	\$ 1,655,956	\$ 951,285	\$ 119,947	\$ 2,259,661	\$ 561	\$ 2,259,080.05	\$ 1,219,244	\$ 609,371						
Power Manager®	\$ 548,383	-	\$ 150,928	\$ 722,772	-	\$ 722,772.25	-	\$ 131,589						
Power Manager® for Apartments	\$ 13,222	-	\$ (1,136)	\$ 13,307	-	\$ 13,306.81	-	\$ (1,331)						
Home Energy Assistance Pilot Program (I) Revenues collected except for HEA	\$ 255,722	-	-	\$ 307,528	\$ 128,998	\$ 176,532	-	-					\$ 108,389	\$ 150,012
<b>Total</b>	<b>\$ 4,958,272</b>	<b>\$ 1,993,625</b>	<b>\$ 483,759</b>	<b>\$ 5,068,582</b>	<b>\$ 426,748</b>	<b>\$ 4,642,836</b>	<b>\$ 2,086,843</b>	<b>\$ 900,617</b>	<b>\$ (1,234,243)</b>	<b>\$ 3,259,486</b>	<b>\$ 1,917,222</b>	<b>\$ 10,823,690</b>	<b>\$ (2,724,719)</b>	<b>\$ 48,144</b>

(A) Amounts identified in report filed in Case No. 2015-00368 and Case No. 2018-00289.

(B) Actual program expenditures, lost revenues (for this period and from prior period DSM measure installations), and shared savings for the period July 1, 2016 through June 30, 2017.

(C) Allocation of program expenditures to gas and electric in accordance with the Commission's Order in Case No. 2014-00388.

(D) Recovery allowed in accordance with the Commission's Order in Case No. 2012-00066.

(E) Recovery allowed in accordance with the Commission's Order in Case No. 2012-00065.

(F) Revenues collected through the DSM Rider between July 1, 2016 and June 30, 2017.

(G) Column (5) + Column (9) - Column (11).

(H) Column (6) + Column (7) + Column (8) + Column (10) - Column(12).

(I) Revenues and expenses for the Home Energy Assistance Pilot Program.

Commercial Programs	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Projected Program Costs 7/2016 to 6/2017 (A)	Projected Lost Revenues 7/2016 to 6/2017 (A)	Projected Shared Savings 7/2016 to 6/2017 (A)	Program Expenditures 7/2016 to 6/2017 (B)	Lost Revenues 7/2016 to 6/2017 (B)	Shared Savings 7/2016 to 6/2017 (B)	2016 Reconciliation (C)	Rider Collection (D)	(Over)/Under Collection (E)
Smart Saver® Non-Residential Performance Incentive Program	\$ 15,740	\$ 1,342	\$ (1,065)	\$ 1,173	-	\$ (117)			
Power Manager® for Business	\$ 62,489	\$ 770	\$ (4,382)	\$ 121,093	-	\$ (12,109)			
Small Business Energy Saver	\$ 888,978	\$ 96,128	\$ 251,111	\$ 786,937	\$ 145,462	\$ 312,463			
Smart Saver® Custom	\$ 441,312	\$ 135,828	\$ 197,106	\$ 506,380	\$ 177,534	\$ 338,714			
Smart Saver® Prescriptive - Energy Star Food Service Products	\$ 139,146	\$ 24,549	\$ 46,590	\$ 46,590	\$ 17,769	\$ 10,895			
Smart Saver® Prescriptive - HVAC	\$ 838,628	\$ 46,137	\$ 113,678	\$ 208,662	\$ 22,797	\$ 32,198			
Smart Saver® Prescriptive - Lighting	\$ 1,048,279	\$ 305,365	\$ 272,832	\$ 5,701,451	\$ 375,587	\$ 1,301,217			
Smart Saver® Prescriptive - Motors/Pumps/VFD	\$ 47,256	\$ 17,175	\$ 17,489	\$ 16,946	\$ 12,385	\$ 2,608			
Smart Saver® Prescriptive - Process Equipment	\$ 28,558	\$ 2,961	\$ 18,594	\$ 20,407	\$ 8,480	\$ 12,197			
Smart Saver® Prescriptive - IT	\$ 75,342	\$ 8,512	\$ 23,324	\$ 13,382	\$ 5	\$ (1,338)			
<b>Total</b>	<b>\$ 3,384,724</b>	<b>\$ 702,760</b>	<b>\$ 937,345</b>	<b>\$ 7,528,874</b>	<b>\$ 755,016</b>	<b>\$ 1,996,711</b>	<b>\$ 1,470,303</b>	<b>\$ 6,174,256</b>	<b>\$ 5,576,651</b>
PowerShare®	\$ 1,282,732	-	\$ 351,711	\$ 716,964	-	\$ 184,108	\$ (527,338)	\$ 208,480	\$ 178,273

(A) Amounts identified in report filed in Case No. 2015-00368 and Case No. 2016-00289.

(B) Actual program expenditures, lost revenues (for this period and from prior period DSM measure installations), and shared savings for the period July 1, 2016 through June 30, 2017.

(C) Recovery allowed in accordance with the Commission's Order in Case No. 2012-00066.

(D) Revenues collected through the DSM Rider between July 1, 2016 and June 30, 2017.

(E) Column (4) + Column (5) + Column (6) + Column (7) - Column (8)

Kentucky DSM Rider

2018-2019 Projected Program Costs, Lost Revenues, and Shared Savings

Residential Program Summary (A)

	Residential Program Summary (A)				Allocation of Costs (B)			Budget (Costs, Lost Revenues, & Shared Savings)		
	Costs	Lost Revenues	Shared Savings	Total	Electric	Gas	Electric Costs	Electric	Gas Costs	
Appliance Recycling Program	\$ -	\$ -	\$ -	\$ -	100.0%	0.0%	\$ -	\$ -	\$ -	
Energy Efficiency Education Program for Schools	\$ 255,204	\$ 1,812	\$ 2,361	\$ 259,196	78.7%	23.3%	\$ 195,865	\$ 199,858	\$ 59,538	
Low Income Neighborhood	\$ 343,237	\$ 243	\$ (15,218)	\$ 328,265	100.0%	0.0%	\$ 343,237	\$ 328,265	\$ -	
Low Income Services	\$ 911,344	\$ 1,157	\$ (51,878)	\$ 860,623	49.0%	51.0%	\$ 446,840	\$ 398,118	\$ 464,505	
My Home Energy Report	\$ 798,982	\$ 165,191	\$ 29,319	\$ 993,472	100.0%	0.0%	\$ 798,982	\$ 993,472	\$ -	
Residential Energy Assessments	\$ 300,015	\$ 1,532	\$ 8,033	\$ 309,561	100.0%	0.0%	\$ 300,015	\$ 309,561	\$ -	
Residential Smart Saver®	\$ 2,323,461	\$ 17,149	\$ 106,666	\$ 2,447,296	100.0%	0.0%	\$ 2,323,461	\$ 2,447,296	\$ -	
Power Manager®	\$ 760,837	\$ -	\$ 119,492	\$ 880,329	100.0%	0.0%	\$ 760,837	\$ 880,329	\$ -	
<b>Total Costs, Net Lost Revenues, Shared Savings</b>	<b>\$ 5,693,061</b>	<b>\$ 186,884</b>	<b>\$ 198,818</b>	<b>\$ 6,078,763</b>			<b>\$ 5,189,018</b>	<b>\$ 5,554,720</b>	<b>\$ 524,043</b>	
Home Energy Assistance Pilot Program	\$ 256,401							\$ 150,012	\$ 108,369	

NonResidential Program Summary (A)

	NonResidential Program Summary (A)				Allocation of Costs (B)			Budget (Costs, Lost Revenues, & Shared Savings)		
	Costs	Lost Revenues	Shared Savings	Total	Electric	Gas	Electric Costs	Electric	Gas	
Small Business Energy Saver	\$ 909,857	\$ 3,776	\$ 117,551	\$ 1,030,984	100.0%	0.0%	\$ 909,857	\$ 1,030,984	NA	
Smart Saver® Custom	\$ 598,335	\$ 3,732	\$ 86,746	\$ 688,813	100.0%	0.0%	\$ 598,335	\$ 688,813	NA	
Smart Saver® Non-Residential Performance Incentive Program	\$ 205,022	\$ 2,543	\$ 47,181	\$ 254,746	100.0%	0.0%	\$ 205,022	\$ 254,746	NA	
Smart Saver® Prescriptive - Energy Star Food Service Products	\$ 40,698	\$ 241	\$ 8,192	\$ 49,130	100.0%	0.0%	\$ 40,698	\$ 49,130	NA	
Smart Saver® Prescriptive - HVAC	\$ 130,283	\$ 513	\$ 25,382	\$ 156,158	100.0%	0.0%	\$ 130,283	\$ 156,158	NA	
Smart Saver® Prescriptive - IT	\$ 7,997	\$ 0	\$ (800)	\$ 7,197	100.0%	0.0%	\$ 7,997	\$ 7,197	NA	
Smart Saver® Prescriptive - Lighting	\$ 1,349,145	\$ 7,708	\$ 290,570	\$ 1,647,424	100.0%	0.0%	\$ 1,349,145	\$ 1,647,424	NA	
Smart Saver® Prescriptive - Motors/Pumps/VFD	\$ 13,754	\$ 0	\$ (1,287)	\$ 12,467	100.0%	0.0%	\$ 13,754	\$ 12,467	NA	
Smart Saver® Prescriptive - Process Equipment	\$ 7,116	\$ 0	\$ (712)	\$ 6,405	100.0%	0.0%	\$ 7,116	\$ 6,405	NA	
Power Manager® for Business	\$ 180,181	\$ 244	\$ (7,458)	\$ 172,967	100.0%	0.0%	\$ 180,181	\$ 172,967	NA	
PowerShare®	\$ 923,717	\$ -	\$ 93,854	\$ 1,017,571	100.0%	0.0%	\$ 923,717	\$ 1,017,571	NA	
<b>Total Costs, Net Lost Revenues, Shared Savings</b>	<b>\$ 4,365,885</b>	<b>\$ 18,758</b>	<b>\$ 659,220</b>	<b>\$ 5,043,863</b>			<b>\$ 4,365,885</b>	<b>\$ 5,043,863</b>	<b>NA</b>	
<b>Total Program</b>	<b>\$ 10,058,946</b>	<b>\$ 205,642</b>	<b>\$ 658,038</b>	<b>\$ 11,122,625</b>						

(A) Costs, Lost Revenues (for this period and from prior period DSM measure installations), and Shared Savings for Year 7 of portfolio.  
(B) Allocation of program expenditures to gas and electric in accordance with the Commission's Order in Case No. 2014-00388.

Kentucky DSM Rider

Duke Energy Kentucky  
Demand Side Management Cost Recovery Rider (DSMR)  
Summary of Calculations for Programs

July 2018 to June 2019

	Program Costs (A)
<u>Electric Rider DSM</u>	
Residential Rate RS	\$ 5,554,720
Distribution Level Rates Part A DS, DP, DT, GS-FL, EH & SP	\$ 4,026,292
Transmission Level Rates & Distribution Level Rates Part B	\$ 1,017,571
<u>Gas Rider DSM</u>	
Residential Rate RS	\$ 524,043

(A) See Appendix B, page 2 of 5.

Kentucky DSM Rider

Duke Energy Kentucky  
Demand Side Management Cost Recovery Rider (DSMR)  
Summary of Billing Determinants

Year	2018
Projected Annual Electric Sales kWh	
Rate RS	1,452,393,991
Rates DS, DP, DT, GS-FL, EH, & SP	2,399,931,932
Rates DS, DP, DT, GS-FL, EH, SP, & TT	2,586,939,932
Projected Annual Gas Sales CCF	
Rate RS	55,988,621

Kentucky DSM Rider

Duke Energy Kentucky  
Demand Side Management Cost Recovery Rider (DSMR)  
Summary of Calculations

July 2016 to June 2017

Rate Schedule Riders	True-Up Amount (A)	Expected Program Costs (B)	Total DSM Revenue Requirements	Estimated Billing Determinants (C)	DSM Cost Recovery Rider (DSMR)
<u>Electric Rider DSM</u>					
Residential Rate RS	\$ 46,605	\$ 5,554,720	\$ 5,601,325	1,452,393,991 kWh	\$ 0.003857 \$/kWh
Distribution Level Rates Part A DS, DP, DT, GS-FL, EH & SP	\$ 5,632,415	\$ 4,026,282	\$ 9,658,708	2,399,931,932 kWh	\$ 0.004025 \$/kWh
Transmission Level Rates & Distribution Level Rates Part B TT	\$ 180,056	\$ 1,017,571	\$ 1,187,627	2,586,939,932 kWh	\$ 0.000463 \$/kWh
Distribution Level Rates Total DS, DP, DT, GS-FL, EH & SP					\$ 0.004488 \$/kWh
<u>Gas Rider DSM</u>					
Residential Rate RS	\$ (2,751,966)	\$ 524,043	\$ (2,227,923)	55,988,821 CCF	\$ (0.039782) \$/CCF
<b>Total Rider Recovery</b>			<b>\$ 14,229,738</b>		
Customer Charge for HEA Program					
<u>Electric No. 4</u>			Annual Revenues	Number of Customers	Monthly Customer Charge
Residential Rate RS			\$ 150,012	125,010	\$ 0.10
<u>Gas No. 5</u>					
Residential Rate RS			\$ 108,389	90,324	\$ 0.10
<b>Total Customer Charge Revenues</b>			<b>\$ 258,401</b>		
<b>Total Recovery</b>			<b>\$ 14,488,139</b>		

(A) (Over)/Under of Appendix B page 1 multiplied by the average three-month commercial paper rate for 2017 to include interest on over or under-recovery in accordance with the Commission's order in Case No. 95-312. Value is:  
(B) Appendix B, page 2.  
(C) Appendix B, page 4

Summary of Load Impacts July 2016 Through June 2017\*

Allocation Factors based on July 2016-  
June 2017

Residential Programs	kWh	% of Total Res		ccf	% of Total Res		Elec % of Total % of Gas % of Total % of	
		Sales			Sales		Sales	Sales
Appliance Recycling Program	-	0.0000%		-	0.0000%	100%		0%
Energy Efficiency Education Program for Schools	483,863	0.0332%		5,715	0.0112%	75%		25%
Low Income Neighborhood	257,693	0.0177%		-	0.0000%	100%		0%
Low Income Services	274,939	0.0189%		8,240	0.0162%	54%		46%
My Home Energy Report	11,187,354	0.7685%		-	0.0000%	100%		0%
Residential Energy Assessments	433,777	0.0298%		-	0.0000%	100%		0%
Residential Smart \$aver®	8,135,927	0.5589%		73	0.0001%	100%		0%
Power Manager®	-	0.0000%		-	0.0000%	100%		0%
Power Manager® for Apartments	-	0.0000%		-	0.0000%	100%		0%
<b>Total Residential</b>	<b>20,773,552</b>	<b>1.4269%</b>		<b>14,029</b>	<b>0.0275%</b>			
<b>Total Residential (Rate RS) Sales For July 2016 Through June 2017</b>	<b>1,455,830,803</b>	<b>100%</b>		<b>50,973,918</b>	<b>100%</b>			

\*Load Impacts Net of Free Riders at Meter



Summary of Load Impacts July 2018 Through June 2019 (1),(2)

Allocation Factors Projected - Revised

	<u>kWh</u>	<u>% of Total Res Sales</u>	<u>ccf</u>	<u>% of Total Res Sales</u>	<u>Elec % of Total Sales</u>	<u>% of Gas Sales</u>	<u>% of Total Sales</u>
Residential Programs							
Appliance Recycling Program	-	0.0000%	-	0.0000%	100%		0%
Energy Efficiency Education Program for Schools	485,608	0.0334%	5,696	0.0102%	77%		23%
Low Income Neighborhood	233,478	0.0161%	-	0.0000%	100%		0%
Low Income Services	319,010	0.0220%	12,784	0.0228%	49%		51%
My Home Energy Report	13,289,996	0.9150%	-	0.0000%	100%		0%
Residential Energy Assessments	424,069	0.0292%	-	0.0000%	100%		0%
Residential Smart Saver®	5,233,623	0.3603%	-	0.0000%	100%		0%
Power Manager®	-	0.0000%	-	0.0000%	100%		0%
<b>Total Residential</b>	<b>19,985,783</b>	<b>1.3761%</b>	<b>18,480</b>	<b>0.0330%</b>			
<b>Total Residential (Rate RS) Sales Projected</b>	<b>1,452,393,991</b>	<b>100%</b>	<b>55,988,621</b>	<b>100%</b>			

(1) Load Impacts Net of Free Riders at Meter

(2) Appliance Recycling Program will continue to collect lost revenues for prior period participation.

Duke Energy Kentucky  
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KY.P.S.C. Electric No. 2  
Twenty-Second Revised Sheet No. 78  
Cancels and Supersedes  
Twenty-First Revised Sheet No. 78  
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**RIDER DSMR**

**DEMAND SIDE MANAGEMENT RATE**

The Demand Side Management Rate (DSMR) shall be determined in accordance with the provisions of Rider DSM, Demand Side Management Cost Recovery Rider, Sheet No. 75 of this Tariff.

The DSMR to be applied to residential customer bills is \$0.003857 per kilowatt-hour. (R)

A Home Energy Assistance Program (HEA) charge of \$0.10 will be applied monthly to residential customer bills through December 2020.

The DSMR to be applied to non-residential distribution service customer bills is \$0.004488 per kilowatt-hour. (I)

The DSMR to be applied for transmission service customer bills is \$0.000463 per kilowatt-hour. (I)

Issued by authority of an Order by the Kentucky Public Service  
Commission dated \_\_\_\_ in Case No. 2017-00427.

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Issued: November 15, 2017  
Effective: December 15, 2017  
Issued by James P. Henning, President /s/ James P. Henning

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KY.P.S.C. Electric No. 2  
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Cancels and Supersedes  
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Page 1 of 1

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**RIDER DSMR**  
**DEMAND SIDE MANAGEMENT RATE**

The Demand Side Management Rate (DSMR) shall be determined in accordance with the provisions of Rider DSM, Demand Side Management Cost Recovery Rider, Sheet No. 75 of this Tariff.

The DSMR to be applied to residential customer bills is \$0.00~~3857~~, per kilowatt-hour.

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A Home Energy Assistance Program (HEA) charge of \$0.10 will be applied monthly to residential customer bills through December 2020.

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The DSMR to be applied to non-residential distribution service customer bills is \$0.00~~4488~~, per kilowatt-hour.

(I) Deleted: 2576

The DSMR to be applied for transmission service customer bills is \$0.000~~463~~, per kilowatt-hour.

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Issued: November 15, 2017  
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KY.P.S.C. Gas No. 2  
Twenty-Second Revised Sheet No. 62  
Cancels and Supersedes  
Twenty-First Revised Sheet No. 62  
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**RIDER DSMR**

**DEMAND SIDE MANAGEMENT RATE**

The Demand Side Management Rate (DSMR) shall be determined in accordance with the provisions of Rider DSM, Demand Side Management Cost Recovery Rider, Sheet No. 61 of this Tariff.

The DSMR to be applied to residential customer bills is \$(0.039792) per hundred cubic feet. (R)

A Home Energy Assistance Program (HEA) charge of \$0.10 will be applied monthly to residential customer bills through December 2020.

The DSMR to be applied to non-residential service customer bills is \$0.00 per hundred cubic feet.

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Effective: December 15, 2017

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Cancels and Supersedes  
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### RIDER DSMR

### DEMAND SIDE MANAGEMENT RATE

The Demand Side Management Rate (DSMR) shall be determined in accordance with the provisions of Rider DSM, Demand Side Management Cost Recovery Rider, Sheet No. 61 of this Tariff.

The DSMR to be applied to residential customer bills is \$(0.039792) per hundred cubic feet.

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A Home Energy Assistance Program (HEA) charge of \$0.10 will be applied monthly to residential customer bills through December 2020.

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The DSMR to be applied to non-residential service customer bills is \$0.00 per hundred cubic feet.

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Status Update for Duke Energy Kentucky Energy Efficiency and Demand Response Programs - 2017

Planned: Evaluation, Measurement and Verification Activities and Evaluation Reports

Residential Customer Programs	Program/Measure	Last Evaluation completion	Next Evaluation ==>	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019
Energy Education Program for Schools	K12 Curriculum	7/30/2015					M&V	M&V	M&V	Report					
	NEED	11/1/2016	TBD												
Low Income Neighborhood	Neighborhood	2/27/2015						M&V	M&V	M&V	M&V	Report			
Low Income Services	Refrigerator Replace		TBD												
	Weatherization & Payment Plus	7/31/2013													
My Home Energy Report	MyHER	2/1/2014					M&V	M&V	Report						
Residential Energy Assessments	HEHC	7/29/2013		M&V	M&V	M&V	M&V	M&V	M&V	Report					
Residential Smart Saver*	HVAC	9/21/2015								M&V	M&V	Report			
	CFL, now LED	CFL 5/13/14								M&V	M&V	M&V	Report		
	Specialty Bulbs; online	6/22/2015								M&V	M&V	M&V			
	Water Measures	N/A		M&V	M&V	M&V	M&V	M&V	Report						
Power Manager	Multi-Family	8/1/2014								M&V	M&V	Report			
		5/30/2014					M&V	M&V	M&V	M&V	M&V	M&V	Report		
<b>Non-Residential Customer Programs</b>				<b>Q1 2017</b>	<b>Q2 2017</b>	<b>Q3 2017</b>	<b>Q4 2017</b>	<b>Q1 2018</b>	<b>Q2 2018</b>	<b>Q3 2018</b>	<b>Q4 2018</b>	<b>Q1 2019</b>	<b>Q2 2019</b>	<b>Q3 2019</b>	<b>Q4 2019</b>
Small Business Energy Saver		4/7/2017		M&V	Report										
Smart Saver* Non-Res, Custom		3/1/2016		M&V	M&V	M&V	M&V	M&V	Report						
Smart Saver* Non-Res, Prescriptive		11/21/2013						M&V	M&V	M&V	Report				
PowerShare		2/14/2017					M&V	M&V	M&V	M&V	M&V	Report			
Pay For Performance		N/A	TBD												

\* Future Evaluation Report dates are projections only. Actual report dates will vary depending on program participation, time to achieve a significant sample and the time needed to collect adequate data.

LEGEND	
M&V	Data collection (surveys, interviews, onsite visits, billing data) and analysis
Report	Evaluation Report