



Mr. Jeff DeRouen
Executive Director
Kentucky Public Service Commission
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Frankfort, Kentucky 40601

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APR 14 2011

PUBLIC SERVICE
COMMISSION

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April 14, 2011

RE: *Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Review, Modification, and Continuation of Existing, and Addition of New Demand-Side Management and Energy-Efficiency Programs – Case No. 2011-00__*

Dear Mr. DeRouen:

Please find enclosed and accept for filing pursuant to KRS 278.285 an original and ten copies of Louisville Gas and Electric Company's and Kentucky Utilities Company's Joint Application and Demand-Side Management and Energy Efficiency Program Plan.

The ten copies include a hard copy of Volume I and a CD that includes an electronic copy of Volumes II, III and IV. In addition, the Companies have provided one CD with an electronic copy of all volumes to assist the Commission in uploading this information to the Commission's website.

Should you have any questions regarding the enclosed, please do not hesitate to contact me.

Sincerely,

Rick E. Lovekamp

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED

APR 14 2011

PUBLIC SERVICE
COMMISSION

In the Matter of:

)
)
JOINT APPLICATION OF LOUISVILLE GAS)
AND ELECTRIC COMPANY AND KENTUCKY)
UTILITIES COMPANY FOR REVIEW,)
MODIFICATION, AND CONTINUATION OF)
EXISTING, AND ADDITION OF NEW,)
DEMAND-SIDE MANAGEMENT AND)
ENERGY-EFFICIENCY PROGRAMS)

CASE NO. 2011-_____

JOINT APPLICATION

Louisville Gas and Electric Company (“LG&E”) and Kentucky Utilities Company (“KU”) (collectively “the Companies”) hereby petition the Kentucky Public Service Commission (“Commission”) pursuant to KRS 278.285 to issue an Order approving their proposed Demand-Side Management and Energy Efficiency Program Plan (“Program Plan”) and the proposed Demand Side Management (“DSM”) cost recovery tariffs filed herein that will permit recovery of the costs associated with the proposed programs. The Companies respectfully request the Commission to issue a final order in this proceeding by October 13, 2011, with the Companies’ revised tariff sheets to be effective six weeks after the date of the Commission’s final order approving them.

In support of this Application, the Companies respectfully state:

1. Addresses: Applicant LG&E’s full name and post office address is: Louisville Gas and Electric Company, 220 West Main Street, Post Office Box 32010, Louisville, Kentucky 40202.

Applicant KU’s full name and business address is: Kentucky Utilities Company, One Quality Street, Lexington, Kentucky 40507. KU’s mailing address is Kentucky Utilities

Company c/o Louisville Gas and Electric Company, 220 West Main Street, Post Office Box 32010, Louisville, Kentucky 40202.

2. Articles of Incorporation: A certified copy of LG&E's Articles of Incorporation is on file with the Commission in Case No. 2010-00204, *In the Matter of: The Joint Application of PPL Corporation, E.ON AG, E.ON U.S. Investments Corp., E.ON U.S. LLC, Louisville Gas & Electric Company and Kentucky Utilities Company for Approval of an Acquisition of Ownership and Control of Utilities* and is incorporated by reference herein pursuant to 807 KAR 5:001, Section 8(3).

Likewise, a certified copy of KU's current Articles of Incorporation is on file with the Commission in Case No. 2010-00204, *In the Matter of: The Joint Application of PPL Corporation, E.ON AG, E.ON U.S. Investments Corp., E.ON U.S. LLC, Louisville Gas and Electric Company and Kentucky Utilities Company for Approval of an Acquisition of Ownership and Control of Utilities* and is incorporated by reference herein pursuant to 807 KAR 5:001, Section 8(3).

3. LG&E is a public utility, as defined in KRS 278.010(3)(a), engaged in the electric and gas business. LG&E generates and purchases electricity, and distributes and sells electricity at retail in Jefferson County and portions of Bullitt, Hardin, Henry, Meade, Oldham, Shelby, Spencer, and Trimble Counties. LG&E also purchases, stores, and transports natural gas, and distributes and sells natural gas at retail in Jefferson County and portions of Barren, Bullitt, Green, Hardin, Hart, Henry, Larue, Marion, Meade, Metcalfe, Nelson, Oldham, Shelby, Spencer, Trimble, and Washington Counties.

4. KU is a public utility, as defined in KRS 278.010(3)(a), engaged in the electric business. KU generates and purchases electricity, and distributes and sells electricity at retail in the following counties in Central, Northern, Southeastern and Western Kentucky:

Adair	Edmonson	Jessamine	Ohio
Anderson	Estill	Knox	Oldham
Ballard	Fayette	Larue	Owen
Barren	Fleming	Laurel	Pendleton
Bath	Franklin	Lee	Pulaski
Bell	Fulton	Lincoln	Robertson
Bourbon	Gallatin	Livingston	Rockcastle
Boyle	Garrard	Lyon	Rowan
Bracken	Grant	Madison	Russell
Bullitt	Grayson	Marion	Scott
Caldwell	Green	Mason	Shelby
Campbell	Hardin	McCracken	Spencer
Carlisle	Harlan	McCreary	Taylor
Carroll	Harrison	McLean	Trimble
Casey	Hart	Mercer	Union
Christian	Henderson	Montgomery	Washington
Clark	Henry	Muhlenberg	Webster
Clay	Hickman	Nelson	Whitley
Crittenden	Hopkins	Nicholas	Woodford
Daviess			

5. Copies of all orders, pleadings and other communications related to this proceeding should be directed to:

Lonnie E. Bellar
Vice President, State Regulation and Rates
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(502) 627-4830

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Kendrick R. Riggs
W. Duncan Crosby III
Barry L. Dunn
Stoll Keenon Ogden PLLC
2000 PNC Plaza
500 West Jefferson Street
Louisville, Kentucky 40202
(502) 333-6000

This Commission and Other Kentucky Leaders Have Emphasized the Need for Greater Demand-Side Management/Energy Efficiency Program Development and Deployment

6. The Commission recently expressed its clear desire to see greater development and deployment of DSM/EE programs in its February 17, 2011 Final Order in Case No. 2010-00222:

The Commission believes that conservation, energy efficiency and DSM, generally, will become more important and cost-effective as there will likely be more constraints placed upon utilities whose main source of supply is coal-based generation.

...

[T]he Commission believes that it is appropriate to strongly encourage Meade, and all other electric energy providers, to make a greater effort to offer cost-effective DSM and other energy efficiency programs.¹

In November 2008, Governor Beshear's administration released a report entitled, "Intelligent Energy Choices for Kentucky's Future." The report outlines seven strategies to diversify sources of energy, conserve energy, and become more energy-efficient to reduce demand. The very first strategy stated in the Governor's report is, "Strategy 1: Improve the Energy Efficiency of Kentucky's Homes, Buildings, Industries, and Transportation Fleet," with a

¹ *In the Matter of: Application of Meade County Rural Electric Cooperative Corporation to Adjust Electric Rates*, Case No. 2010-00222, Order at 15-16 (Feb. 17, 2011).

strategic goal of having “[e]nergy efficiency ... offset at least 18 percent of Kentucky’s projected 2025 energy demand.”²

To continue the work begun in the 2008 report, the Secretary of the Kentucky Energy and Environment Cabinet, Dr. Len Peters, convened the Kentucky Climate Action Plan Council in January 2010 to build upon selected provisions of the seven-point strategy and to “focus attention on creating opportunities to build on Kentucky’s progress to date to become more energy efficient, to reduce dependence on foreign oil, to enhance the nation’s energy security, to promote new energy related technologies, and to enhance economic opportunities in Kentucky.”³

This filing proposing new and expanded Demand-Side Management/Energy Efficiency Programs furthers the goals expressed by the Commission, the Governor, and Secretary Peters.

Current and Proposed Demand-Side Management/Energy Efficiency Programs

7. Pursuant to the Commission’s March 31, 2008 Order in Case No. 2007-00319, the Companies are currently operating a suite of demand-side management and energy efficiency (“DSM/EE”) programs for the benefit of their residential and commercial customers. The programs are:

- Residential and Commercial Load Management / Demand Conservation Program
- Commercial Conservation / Commercial Incentive Program
- Residential Conservation / Home Energy Performance Program
- Residential Low Income Weatherization Program (WeCare)
- Program Development and Administration
- Residential High Efficiency Lighting
- Residential New Construction

² Intelligent Energy Choices for Kentucky’s Future at v-vi. Available at: http://www.purchaseadd.org/files/pdf/pacro/final_energy_strategy_for_kentucky.pdf

³ Available at <http://www.kyclimatechange.us>.

- Residential and Commercial HVAC Diagnostic and Tune Up
- Customer Education and Public Information
- Dealer Referral Network

The Commission has approved budgets and cost recovery for these programs through December 31, 2014. To date, these programs have produced cumulative energy savings of 207,900 MWh, 4 million ccf, and a cumulative demand reduction of 182 MW.

8. On April 21, 2008, the Companies filed with the Commission their triennial Joint Integrated Resource Plan (“2008 IRP”) in Case No. 2008-00148. As with their prior IRPs, in the 2008 IRP the Companies considered possible additional DSM/EE programs to be drawn upon as future resources. There were a total of 80 DSM/EE programs that were assessed for inclusion into the 2008 IRP. Each program was evaluated using a two-step process. The first step was qualitative in nature, where each program was evaluated based on predetermined criteria. The DSM/EE programs that passed this initial step underwent a second step of screening that was quantitative in nature. The DSM/EE programs that passed the quantitative screening process were evaluated with supply side alternatives. Included among the possible new DSM/EE programs reviewed were residential rebates for window films and secondary refrigerator removal.

9. Prompted by the 2008 IRP and the Companies’ ongoing review of current DSM/EE programs and research into possible new programs, the Companies began formulating concepts for enhanced and additional DSM/EE programs in 2009. Through additional quantitative screening of the initial 80 DSM/EE programs that were assessed for inclusion in the 2008 IRP, the Companies presented a more refined set of 17 program enhancements and proposals to their Energy Efficiency Advisory Group in September 2009 to obtain feedback about their existing and proposed programs. The invitees included representatives from the

Attorney General's office, Governor's Office of Energy Policy, low-income advocacy groups, governmental environmental protection agencies, and businesses. The group reviewed 17 enhancements and new programs, finding 10 of them to be useful, relevant, and a prudent use of consumer dollars.

Based on feedback from the September 2009 meeting, the Companies conducted further analysis on the 10 identified programs. When additional analysis was completed, the Companies held another meeting in July 2010 with the Energy Efficiency Advisory Group to obtain further feedback. In this meeting, the group was provided an overview of the 10 programs that were analyzed for inclusion in this Application.

The third opportunity for the Companies to communicate with representatives of various customer groups came in November and December of 2010. During this time, the Companies met individually with the Attorney General, low-income advocacy groups, community action councils, Kentucky Department for Energy Development and Independence, Kentucky School Board Association, American Association of Retired Persons, and the Energy Efficiency Advisory Group.

The eight enhancements and new programs presented in the Companies' Application in this proceeding are, therefore, a result of the combined effort of the Companies and the Energy Efficiency Advisory Group.

10. In addition to the analysis provided in the 2008 IRP and the collaborative effort described above, the Companies applied to their existing and proposed DSM/EE programs the industry-standard cost-benefit tests set out in the California Standard Practice Manual, which the Commission explicitly requires utilities to apply: "Any new DSM program or change to an existing DSM program shall be supported by ... [t]he results of the four traditional DSM cost-

benefit tests [Participant, Total Resource Cost, Ratepayer Impact, and Utility Cost tests].”⁴ Each of the new and enhanced programs proposed in this Application passed the Participant and Total Resource Cost tests.

11. On the basis of the above-described analyses and collaboration, the Companies propose to enhance and extend for an additional seven years the following existing DSM/EE programs: Residential and Commercial Load Management / Demand Conservation Program, Commercial Conservation / Commercial Incentive Program, Residential Conservation / Home Energy Performance Program, Residential Low Income Weatherization Program (WeCare), and Program Development and Administration.

The Companies further propose to add the following new DSM/EE programs to their current offerings: Smart Energy Profile Program, Residential Incentive Program, and the Residential Refrigerator Removal Program.

All of these new and enhanced programs are described more fully in the Direct Testimony of Michael E. Hornung and the Demand-Side Management and Energy Efficiency Program Plan.

12. The Companies propose not to change or amend the remaining existing programs: Residential High Efficiency Lighting, Residential New Construction, Residential and Commercial HVAC Diagnostic and Tune Up, Customer Education and Public Information, and the Dealer Referral Network. Rather, the Companies propose to allow these programs to remain in effect with their Commission-approved budgets through December 31, 2014 (as approved by the Commission in Case No. 2007-00319). Each of these programs is a “market transformation program” that will achieve the desired market transformation by the end of 2014, or is currently

⁴ *In the Matter of the Joint Application of the Members of the Louisville Gas and Electric Company Demand-Side Management Collaborative for the Review, Modification, and Continuation of the Collaborative, DSM Programs, and Cost Recovery Mechanism*, Case No. 1997-00083, Order at 20 (April 27, 1998).

operating satisfactorily within its approved program design but does not appear to warrant extension beyond the end of 2014 (or both); therefore these programs do not warrant enhancements or extensions at this time.

13. The Companies project that over the lives of the existing and proposed programs contained in the seven-year plan customers will reduce demand by 309 MW from year one through year seven, and realize a total energy savings from year one through year seven of 1,411 GWh. To achieve those benefits, the Companies project a total DSM/EE portfolio cost of \$263.8 million from year one through year seven, with an annual budget ranging from \$32.1 million to \$44.4 million.

14. The Companies project that the monthly bill impact for year one of the new DSM/EE programs and program enhancements will be \$2.06 for LG&E residential electric customers and \$2.41 for KU residential electric customers using 1,000 kWh per month as depicted in the proposed tariffs attached in this filing. The current DSM/EE charge for LG&E residential electric customers is \$2.00 and \$2.17 for KU residential electric customers. The Companies project that the monthly gas bill impact for year one of the new DSM/EE programs and program enhancements will be \$1.68 for LG&E residential gas customers using 70 Ccf per month as depicted in the proposed tariffs attached in this filing. The current DSM/EE charge for LG&E residential gas customers is \$1.23.

Proposed Changes to the DSM Cost Recovery Mechanism

15. The Companies' proposed DSM tariffs contain separate cost recovery mechanisms for the Companies. The proposed DSM/EE programs will be operated as one group of programs available to the Companies' customers. Though the programs will operate as "one" from the customers' perspective, separate accounting will allow for the proper recovery of the

Demand-Side Management Cost Recovery Mechanism components from each utility's individual customers within the appropriate rate classes.

16. The DSM Cost Recovery Mechanism is a means to recover all applicable costs related to DSM/EE programs the Commission approves. The mechanism is a mandatory schedule (except for the statutory provisions allowing industrial customers to opt out) and the monthly amount calculated is adjusted by the DSM Cost Recovery Component (DSMRC) at a rate per kWh of monthly consumption. The calculation currently consists of the following four components:

(1) DSM Cost Recovery (DCR): All expected program costs such as evaluation, developing, planning, implementing, and monitoring.

(2) DSM Revenue from Lost Sales (DRLS): Reduced energy consumption related to DSM program implementation. These are available to each program for thirty-six months or until implementation of new rates.

(3) DSM Incentive (DSMI): The minimum of 15% of net resource savings (energy and capacity) from the approved program or 5% of program expenditures. Incentives for Energy Education Programs are simply 5% of program expenditures.

(4) DSM Balancing Adjustment (DBA): Annual reconciliation between the amounts of revenue actually billed versus the revenues that should have been billed, plus interest.

The DSMRC is based on the following formula:

$$\text{DSMRC} = \text{DCR} + \text{DRLS} + \text{DSMI} + \text{DBA}$$

The Companies do not propose to change any of the four existing components of the DSMRC calculation above, including the DSM incentive.

17. The current DSM Cost Recovery Mechanism does not account for any Company-owned capital assets to be used in advancement of energy efficiency throughout the service

territory. The Companies now propose to add a fifth element to the DSMRC to account for the capital expenditure needed to develop the Residential and Commercial Load Management / Demand Conservation Program included in the Demand-Side Management and Energy Efficiency Program Plan. The proposed added element, to be defined as the DSM Capital Cost Recovery (“DCCR”), would allow the Companies to earn an approved return on equity exclusively for the capital expenditures outlined within that program. The Companies propose a 10.50% return on equity for capital invested for this program, which is the midpoint of the range of returns on equity that was stipulated as reasonable in the Companies’ most recent rate cases.⁵ It is also well within the range of returns on equity the Commission found reasonable in the Companies’ most recent base rate cases,⁶ and other data, including other Commission orders, support the reasonableness of the Companies’ proposed return on equity.

The DSMRC with a rate of return on capital investment would follow this formula:

$$\text{DSMRC} = \text{DCR} + \text{DRLS} + \text{DSMI} + \text{DBA} + \text{DCCR}$$

Lonnie E. Bellar is sponsoring the Companies’ revised DSM/EE tariffs, which are attached to his direct testimony as Exhibit LEB-1.

18. The proposed tariffs assume an effective date of May 14, 2011; however, the Companies request that the tariffs not be effective retroactively. Rather, the Companies request

⁵ *In the Matter of Application of Kentucky Utilities Company for an Adjustment of Base Rates*, Case No. 2009-00548, Order at 34 and Appx. A at 4 (July 30, 2010); *In the Matter of Application of Louisville Gas and Electric Company for an Adjustment of Electric and Gas Base Rates*, Case No. 2009-00549, Order at 37 and Appx. A at 4 (July 30, 2010).

⁶ *In the Matter of Application of Kentucky Utilities Company for an Adjustment of Base Rates*, Case No. 2009-00548, Order at 31 (July 30, 2010) (“After weighing all the evidence of record, the Commission finds that KU’s required ROE for electric operations falls within a range of 9.75 to 10.75 percent with a midpoint of 10.25 percent.”); *In the Matter of Application of Louisville Gas and Electric Company for an Adjustment of Electric and Gas Base Rates*, Case No. 2009-00549, Order at 33 (July 30, 2010) (“After weighing all the evidence of record, the Commission finds that LG&E’s required ROE for both electric and gas operations falls within a range of 9.75 to 10.75 percent with a midpoint of 10.25 percent.”).

the program budgets and metrics, once approved, be prorated to begin six weeks following the date of the Commission's Order approving this Application, so that any remaining balance from the calendar year one budget may be applied to an eighth calendar year of program activities, allowing the approved budgets to cover a full seven years of programming.

19. The Companies further respectfully request the Commission to issue a final order in this proceeding by October 13, 2011, with the Companies' revised tariff sheets to be effective six weeks after the date of the Commission's final order approving them.

WHEREFORE, Louisville Gas and Electric Company and Kentucky Utilities Company respectfully request the Commission to issue an order approving the Companies' Demand-Side Management and Energy Efficiency Program Plan and the proposed revised Demand Side Management cost recovery tariffs by October 13, 2011, with the Companies' revised tariff sheets to be effective six weeks after the date of the Commission's final order approving them.

Dated: April 14, 2011

Respectfully submitted,



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*Counsel for Louisville Gas and Electric Company
and Kentucky Utilities Company*

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the foregoing Joint Application was served on the following persons on the 14th day of April, 2011, by U.S. mail, postage prepaid:

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Counsel for Louisville Gas and Electric
Company and Kentucky Utilities Company

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

**JOINT APPLICATION OF LOUISVILLE GAS
AND ELECTRIC COMPANY AND KENTUCKY
UTILITIES COMPANY FOR REVIEW,
MODIFICATION, AND CONTINUATION OF
EXISTING, AND ADDITION OF NEW,
DEMAND-SIDE MANAGEMENT AND
ENERGY-EFFICIENCY PROGRAMS**

CASE NO. 2011-_____

**DIRECT TESTIMONY OF
LONNIE E. BELLAR
VICE PRESIDENT OF STATE REGULATION AND RATES
LOUISVILLE GAS AND ELECTRIC COMPANY
AND KENTUCKY UTILITIES COMPANY**

Filed: April 14, 2011

1 **Q. Please state your name, position, and business address.**

2 A. My name is Lonnie E. Bellar. I am the Vice President of State Regulation and Rates
3 for Louisville Gas and Electric Company (“LG&E”) and Kentucky Utilities (“KU”)
4 (collectively, “Companies”) and an employee of LG&E and KU Services Company,
5 which provides services to LG&E and KU. My business address is 220 West Main
6 Street, Louisville, Kentucky. A statement of my qualifications and work experience
7 is attached as Appendix A.

8 **Q. Have you previously testified before the Kentucky Public Service Commission?**

9 A. Yes. I have testified before the Commission multiple times on various regulatory
10 issues, most recently in Case No. 2010-00204 concerning the acquisition of
11 ownership and control of LG&E and KU by PPL Corporation.

12 **Q. What are the purposes of your testimony?**

13 A. The purposes of my testimony are (1) to summarize the filing, (2) to discuss proposed
14 changes to the Demand-Side Management Cost Recovery Mechanism (“DSM
15 Mechanism”), and (3) to explain why it is appropriate to recover through the DSM
16 Mechanism the costs associated with the Companies’ Demand Conservation Program.

17 **Q. Are you supporting any exhibits to your testimony?**

18 A. Yes, I am supporting the revised DSM Mechanism tariff sheets proposed by the
19 Companies, which are collectively attached hereto as Exhibit LEB-1

20 **Overview**

21 **Q. Are other witnesses offering direct testimony on behalf of the Companies in this
22 case?**

23 A. Yes. Michael E. Hornung, the Companies’ Manager, Energy Efficiency
24 Planning/Development, presents testimony that describes the need for Demand-Side

1 Management and Energy Efficiency (“DSM/EE”) programs and the results the
2 Companies’ DSM/EE programs have produced to date. He sponsors the Companies’
3 DSM/EE Program Plan and describes each program therein, as well as the process the
4 Companies used to formulate the plan, including performing cost-benefit analyses;
5 interacting with customer, government, and industry stakeholders; and ensuring
6 consistency with the Companies’ most recent Integrated Resource Plan.

7 **Q. When would the Companies’ revised DSM Mechanism tariff sheets and**
8 **associated DSM programs take effect?**

9 A. The tariff sheets filed with this application show a proposed effective date of May 14,
10 2011. The Companies expect the Commission, prior to the expiration of this 30-day
11 notice, to suspend the operation of the DSM Mechanism tariff sheets filed with this
12 application for a period extending up to five months. The Companies propose that
13 the program budgets and metrics be prorated to begin six weeks after the
14 Commission’s approval in its final order thereafter. The Companies further propose
15 that any remaining balance from the calendar-year-one budget be applied to an eighth
16 year of program activities, allowing the approved budgets to support seven full years
17 of programming.

18 **Proposed Changes to the DSM Mechanism Tariff Sheets**

19 **Q. What is the current DSM Mechanism formula?**

20 A. The current DSM Mechanism formula includes components for DSM cost recovery
21 (“DCR”) (excluding costs capitalized), DSM revenue from lost sales (“DRLS”), DSM
22 incentives (“DSMI”), and DSM balancing adjustments (“DBA”). The formula for
23 calculating the DSM Cost Recovery Component (“DSMRC”) is:

24
$$\text{DSMRC} = \text{DCR} + \text{DRLS} + \text{DSMI} + \text{DBA}$$

1 **Q. What changes do the Companies propose to make to their DSM Mechanism**
2 **tariff sheets?**

3 A. The current DSM Mechanism does not contain a cost-recovery component for the
4 capital assets the Companies use for DSM/EE programs. The Companies are
5 proposing in this proceeding, for regulatory purposes under the DSM mechanism, to
6 record the costs of new load control switches and programmable thermostats
7 deployed as part of the Companies' Residential and Commercial Load Management /
8 Demand Conservation Program ("Load Control Program") as capital costs.
9 Therefore, the Companies propose to revise the DSM Mechanism to include a new
10 component, DSM Capital Cost Recovery ("DCCR"), to allow the Companies to
11 recover the full costs of their demand side management programs, including the cost
12 of their capital investment, as well as a fair rate of return on that investment, as shown
13 below:

$$14 \quad \text{DSMRC} = \text{DCR} + \text{DRLS} + \text{DSMI} + \text{DBA} + \text{DCCR}$$

15 KRS 278.285(1)(c) ("a utility's proposal to recover in rates the full costs of demand-
16 side management programs") and (2)(a) ("recover the full costs of commission-
17 approved demand-side management programs") permit the Companies to recover
18 their DSM/EE-related capital investments, as well as a fair, just, and reasonable
19 return thereon. The "full cost" of the Companies' demand-side management
20 programs includes the cost of both capital and expenses associated with the proposed
21 programs. All components of the Companies' capital structures are used to fund
22 demand-side management program capital costs, including debt and equity.

1 **Q. What rate of return for debt do the Companies propose for the DCCR**
2 **component of the DSM Mechanism?**

3 A. The Companies propose to use their current actual cost of debt for the debt
4 component of their DSM.

5 **Q. What rate of return for equity do the Companies propose for the DCCR**
6 **component of the DSM Mechanism?**

7 A. The Companies propose a 10.50% return on equity (“ROE”), which is the midpoint of
8 the range of returns on equity that all of the parties except the Attorney General—
9 nine parties not including the Companies—stipulated was reasonable in the
10 Companies’ most recent rate cases.¹ It is also well within the range of returns on
11 equity the Commission found reasonable in the Companies’ most recent base rate
12 cases (i.e., 9.75% to 10.75%).² The Companies believe it is fair, just, and reasonable
13 to use a return on equity for capital invested in DSM/EE programs that falls within
14 the range the Commission found reasonable less than a year ago.

15 In addition, the Companies’ proposed return on equity is consistent with those
16 recently authorized by this Commission in cases involving other electric investor-

¹ *In the Matter of Application of Kentucky Utilities Company for an Adjustment of Base Rates*, Case No. 2009-00548, Order at 34 and Appx. A at 4 (July 30, 2010); *In the Matter of Application of Louisville Gas and Electric Company for an Adjustment of Electric and Gas Base Rates*, Case No. 2009-00549, Order at 37 and Appx. A at 4 (July 30, 2010). Collectively, the parties to the Companies’ rate cases were: Kentucky Industrial Utility Customers, Inc. and the interests of its participating members as represented by and through the KIUC; The Kroger Co.; Community Action Council for Lexington-Fayette, Bourbon, Harrison and Nicholas Counties, Inc.; Association of Community Ministries; Kentucky Cable Telecommunications Association; the United States Department of Defense and Other Federal Executive Agencies; Wal-Mart Stores East, LP and Sam’s East, Inc.; Kentucky School Boards Association; and AARP.

² *In the Matter of Application of Kentucky Utilities Company for an Adjustment of Base Rates*, Case No. 2009-00548, Order at 31 (July 30, 2010) (“After weighing all the evidence of record, the Commission finds that KU’s required ROE for electric operations falls within a range of 9.75 to 10.75 percent with a midpoint of 10.25 percent.”); *In the Matter of Application of Louisville Gas and Electric Company for an Adjustment of Electric and Gas Base Rates*, Case No. 2009-00549, Order at 33 (July 30, 2010) (“After weighing all the evidence of record, the Commission finds that LG&E’s required ROE for both electric and gas operations falls within a range of 9.75 to 10.75 percent with a midpoint of 10.25 percent.”).

1 owned utilities. For example, on June 30, 2010, the Commission approved a
2 settlement agreement in Kentucky Power Company's most recent base rate case that,
3 among other things, authorized the use of a 10.5% rate of return on equity for
4 environmental surcharge purposes and for accounting for allowance for funds used
5 during construction.³

6 Moreover, an examination of (1) allowed returns on common equity for
7 utilities in general, (2) the recent level and trend in interest rates, and (3) the projected
8 course of interest rates shows 10.50% to be a reasonable ROE for capital invested in
9 the Companies' DSM/EE programs. According to Regulatory Research Associates
10 *Regulatory Focus* of January 7, 2011, allowed returns for electric utilities for year-
11 end 2010 averaged 10.34%. Though such authority is not in any way binding on the
12 Commission, it is persuasive evidence that the Companies' requested ROE is
13 reasonable and is within the mainstream of allowed returns for electric utilities in
14 general.

15 In addition, risk-free interest rates have risen considerably since the
16 Commission approved a 9.75%-10.75% ROE range of reasonableness in the
17 Companies' most recent base rate cases. The average 10-year Treasury yield in July
18 2010, when the Commission issued its final orders in those cases, was 3.01%.⁴ As of
19 April 11, 2011, the yield for the same security was 3.59%, almost 60 basis points
20 higher.⁵ Similarly, the average 30-year Treasury yield in July 2010 was 3.99%.⁶ As

³ *In the Matter of: General Adjustments of Electric Rates of Kentucky Power Company*, Case No. 2009-00459, Order at Appendix A, Settlement Agreement, Paragraph 7 (June 30, 2010).

⁴ The daily Treasury yield data used to generate this monthly average are available at: <http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year=2010>.

⁵ <http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield>.

1 of April 11, 2011, the yield for the same security was 4.64%, almost 70 basis points
2 higher.⁷ And forward Treasury yields, which are standard, uniform calculations of
3 expected treasury yields based on current Treasury yield curves, indicate that the
4 market expects 10-year Treasury yields to climb more than 80 basis points from
5 today's level by December 1, 2012, and expects 30-year Treasury yields to climb
6 more than 40 basis points during the same period. (Exhibit LEB-2 shows the course
7 of the ten- and thirty-year Treasury yields since July 30, 2010 and the calculation of
8 the forward Treasury yields obtained from Merrill Lynch.) These Treasury yields
9 clearly indicate that an ROE of 10.50% for DSM Mechanism purposes is likely on the
10 conservative side of reasonable given the range of ROEs the Commission approved
11 for the Companies less than a year ago.

12 While a more traditional cost-of-equity analysis using the standard measures
13 such as the Discounted Cash Flow and Capital Asset Pricing Model could well yield a
14 higher ROE, LG&E and KU determined to use a conservative value based on
15 straight-forward and verifiable support to avoid any lengthy debate or contention over
16 this issue in this case.

17 **Why Capital Cost Recovery through the DSM Mechanism Is Appropriate**

18 **Q. Why is it appropriate to include capital recovery and a return on capital in the**
19 **DSM Mechanism?**

20 **A.** To date, the Companies have expensed all of their DSM/EE program costs for
21 regulatory recovery purposes in connection with Commission's approval of their

⁶ The daily Treasury yield data used to generate this monthly average are available at:
<http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year=2010>.

⁷ <http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield>.

1 Load Control programs, including load control switches and programmable
2 thermostats. In this filing, however, the Companies propose, for regulatory recovery
3 purposes under the DSM mechanism, to record as capital costs the costs of new load
4 control switches and programmable thermostats deployed as part of the Load Control
5 Program. These load control switches and programmable thermostats have effective
6 useful lives greater than a year and are similar to meters, which are recorded as
7 capital. Treating the cost of these devices as capital costs for recovery purposes
8 under the DSM mechanism would more appropriately match the costs with benefits
9 over time and, coincidentally, reduce the bill impact of the proposed Load Control
10 Program.

11 Given the history of recovering Load Control Program costs as expenses
12 through the DSM mechanism, the Commission could continue, for regulatory
13 recovery purposes under the DSM mechanism, to treat the costs of new load control
14 switches and programmable thermostats as expenses. However, given the size of the
15 benefit that the use of switches and programmable thermostats can achieve (i.e.,
16 avoidance of the installation of a combustion turbine) and the length of the benefit the
17 Companies believe it is more appropriate to now record the costs of *new* load control
18 switches and programmable thermostats as capital costs for regulatory recovery
19 purposes under the DSM mechanism.

20 **Q. What book depreciation rates will be used in the calculation of the depreciation**
21 **expense for the switches and programmable thermostats associated with the**
22 **Residential and Commercial Load Management/Demand Conservation**
23 **Program?**

1 A. The Companies would book the capital costs associated with these devices for
2 regulatory recovery purposes through the DSM mechanism under Federal Energy
3 Regulatory Commission's ("FERC") Uniform System of Account 397 –
4 Communications Equipment, which includes the installed cost of telephone,
5 telegraph, and wireless equipment for general use in connection with utility
6 operations. The depreciation rate KU uses for the costs in that account is 7.13% (an
7 average life of 14 years); LG&E's depreciation rate for the same costs is 12.00%
8 (average life of 8 years). The Commission approved these rates as part of approving
9 the settlement of the Companies' 2008 base rate cases, Case Nos. 2008-00251 and
10 2008-00252. These Commission-approved rates are based on the Average Service
11 Life methodology.

12 **Q. Please explain how property taxes associated with the new and additional**
13 **communications equipment such as the switches and programmable thermostats**
14 **are calculated.**

15 A. Communications equipment located in Kentucky is generally subject to property and
16 local tax. Specifically, communication equipment is subject to a \$.45 per \$100 of
17 assessment state property tax rate. Concerning local property tax rates, the average
18 local rate for LG&E is \$1.1594429 per \$100 of assessment, and the average for KU is
19 \$.9332774 per \$100 of assessment. These rates would apply to the switches and
20 programmable thermostats deployed by the Residential and Commercial Load
21 Management/Demand Conservation program. Exhibit LEB-3 provides a
22 capitalization summary for the new DCCR component.

1 **Q. How will LG&E and KU identify the operation and maintenance expenses**
2 **associated with the Load Management/Demand Conservation Devices?**

3 A. LG&E and KU's accounting system permits the tracking of costs in accordance with
4 the FERC Uniform System of Accounts. LG&E and KU intend to use FERC
5 Account No. 908005 to identify and track the operation and maintenance expenses
6 associated with the Load Management/Demand Conservation Devices when they
7 become operational. The initial installation cost of each device will be capitalized for
8 regulatory recovery purposes.

9 **Q. Has a utility ever proposed recovering capitalized DSM/EE costs?**

10 A. Yes. In fact, in LG&E's first DSM/EE proceeding, Case No. 1993-00150, one of its
11 witnesses stated in pre-filed testimony, "Expenditures on approved DSM programs
12 will be expensed or capitalized"⁸ The testimony went on to state that "[p]rogram
13 costs will be recovered on a concurrent basis," which costs would include "the cost
14 incurred for planning, developing, implementing, monitoring, and evaluating DSM
15 programs"⁹ The Commission approved the application in that proceeding.¹⁰ So
16 although the Companies have not sought to recover capital costs related to DSM/EE
17 programs, it is not a new idea in the DSM/EE realm.

18 **Q. Is there more recent support for recovering DSM/EE capital costs in the DSM**
19 **Mechanism?**

⁸ *In the Matter of the Joint Application for the Approval of Demand-Side Management Programs, a DSM Cost Recovery Mechanism, and a Continuing Collaborative Process on DSM for Louisville Gas and Electric Company*, Case No. 1993-00150, Prepared Testimony of Martin Blake at 13-14 (July 30, 1993).

⁹ *Id.* at 14-15.

¹⁰ *In the Matter of the Joint Application for the Approval of Demand-Side Management Programs, a DSM Cost Recovery Mechanism, and a Continuing Collaborative Process on DSM for Louisville Gas and Electric Company*, Case No. 1993-00150, Order (Nov. 12, 1993).

1 A. Yes. In Administrative Case No. 2007-00477, the Commission-initiated investigation
2 into the energy and regulatory issues in Section 50 of Kentucky’s 2007 Energy Act, I
3 testified that allowing utilities to recover capital components of DSM/EE costs and
4 providing them a “durable incentive rate of return on equity” would help to encourage
5 utilities to pursue more aggressively DSM/EE initiatives.¹¹

6 More importantly, the Commission’s consultant, Overland Consulting, issued
7 a report in that proceeding that described the current DSM statute as follows:

8 KRS 278.183 became effective July 14, 1992. Generally, this
9 statute created a mechanism to recover environmental
10 compliance costs related to coal combustion wastes and by-
11 products. The surcharge provides for the recovery of capital
12 expenditures, including a reasonable return, as well as
13 operating costs (including allowance purchases costs), taxes
14 and depreciation.¹²

15 Overland’s report went further concerning the recovery of capital DSM/EE
16 costs, recommending with a “high priority” not just “the recovery of capital
17 expenditures, including a reasonable return,” but also an incentive rate of return on all
18 capitalized amounts:

19 The current DSM Surcharge mechanism should be modified.
20 Utility expenditures (capital, and operating costs related to the
21 period of the program) should be capitalized, with amortization
22 based on the estimated period of program benefits. Utilities
23 should be allowed a minimum return of 100 bp higher than the
24 most recent authorized rate of return in the utility’s last rate
25 proceedings. Utilities should be allowed to receive additional
26 incentives based on the actual benefits achieved relative to
27 appropriate targets from energy efficiency and DSM programs.
28 Assuming that program targets are met, these incentives should

¹¹ *In the Matter of an Investigation into the Energy and Regulatory Issues in Section 50 of Kentucky’s 2007 Energy Act*, Administrative Case No. 2007-00477, Testimony of Lonnie E. Bellar at 4-6 (Feb. 29. 2008).

¹² *In the Matter of an Investigation into the Energy and Regulatory Issues in Section 50 of Kentucky’s 2007 Energy Act*, Administrative Case No. 2007-00477, Review of the Incentives for Energy Independence Act of 2007, Section 50 at 20 (Mar. 4. 2008) (emphasis added).

1 provide a reasonable opportunity to earn a graduated return of
2 up to 300 bp over the minimum premium, based on results.¹³

3 To be clear, the Companies do *not* seek to amend their DSM Mechanism to
4 provide for an incentive return on equity for capital investments relating to DSM/EE
5 programs; rather, they propose merely to make explicit provision in the mechanism
6 for the recovery of capital investments and for a fair, just, and reasonable return on
7 those investments, including an ROE (10.50%) that is well within the range of returns
8 on equity the Commission found reasonable less than a year ago in the Companies'
9 most recent base rate cases. It is a very modest proposal compared to the
10 recommendations of the Commission's consultant in Administrative Case No. 2007-
11 00477.

12 **Q. Do you have any recommendations for the Commission?**

13 A. Yes. The Commission should approve the Companies' application in this proceeding.
14 As demonstrated in the testimony of Mr. Hornung, the Companies consulted with
15 numerous representatives of consumer groups about the programs proposed in this
16 application. The strong consensus view of those groups favors the proposed
17 programs. Furthermore, the proposed modifications to the DSM Mechanism are
18 reasonable and should be approved.

19 **Q. Does this conclude your testimony?**

20 A. Yes.

¹³ *In the Matter of an Investigation into the Energy and Regulatory Issues in Section 50 of Kentucky's 2007 Energy Act*, Administrative Case No. 2007-00477, Review of the Incentives for Energy Independence Act of 2007, Section 50 at 13 and 106 (Mar. 4. 2008).

APPENDIX A

Lonnie E. Bellar

LG&E and KU Services Company
220 West Main Street
Louisville, Kentucky 40202

Education

Bachelors in Electrical Engineering;
University of Kentucky, May 1987
Bachelors in Engineering Arts;
Georgetown College, May 1987
E.ON Academy, Intercultural Effectiveness Program: 2002-2003
E.ON Finance, Harvard Business School: 2003
E.ON Executive Pool: 2003-2007
E.ON Executive Program, Harvard Business School: 2006
E.ON Academy, Personal Awareness and Impact: 2006

Professional Experience

LG&E and KU Services Company

Vice President, State Regulation and Rates Nov. 2010 – Present

E.ON U.S.

Vice President, State Regulation and Rates Aug. 2007 – Nov. 2010
Director, Transmission Sept. 2006 – Aug. 2007
Director, Financial Planning and Controlling April 2005 – Sept. 2006
General Manager, Cane Run, Ohio Falls and Combustion Turbines Feb. 2003 – April 2005
Director, Generation Services Feb. 2000 – Feb. 2003
Manager, Generation Systems Planning Sept. 1998 – Feb. 2000
Group Leader, Generation Planning and Sales Support May 1998 – Sept. 1998

Kentucky Utilities Company

Manager, Generation Planning Sept. 1995 – May 1998
Supervisor, Generation Planning Jan. 1993 – Sept. 1995
Technical Engineer I, II, and Senior, Generation System Planning May 1987 – Jan. 1993

Professional Memberships

IEEE

Civic Activities

E.ON U.S. Power of One Co-Chair – 2007
Louisville Science Center – Board of Directors – 2008
Metro United Way Campaign – 2008
UK College of Engineering Advisory Board - 2009

EXHIBIT LEB-1
LG&E ELECTRIC
CLEAN VERSION

Louisville Gas and Electric Company

P.S.C. Electric No. 8, First Revision of Original Sheet No. 86
Canceling P.S.C. Electric No. 8, Original Sheet No. 86

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
APPLICABLE	
In all territory served.	
AVAILABILITY OF SERVICE	
<p>This schedule is mandatory to Residential Rate RS, Volunteer Fire Department Rate VFD, General Service Rate GS, Power Service Rate PS, Industrial Time-of-Day Secondary Service Rate ITODS, Commercial Time-of-Day Secondary Service Rate CTODS, Industrial Time-of-Day Primary Service Rate ITODP, Commercial Time-of-Day Primary Service Rate CTODP, Retail Transmission Service Rate RTS, Residential Responsive Pricing Service Rate RRP, General Responsive Pricing Service Rate RRP, and Low Emission Vehicle Service Rider LEV. Industrial customers who elect not to participate in a demand-side management program hereunder shall not be assessed a charge pursuant to this mechanism. For purposes of rate application hereunder, non-residential customers will be considered "industrial" if they are primarily engaged in a process or processes that create or change raw or unfinished materials into another form or product, and/or in accordance with the North American Industry Classification System, Sections 21, 22, 31, 32, and 33. All other non-residential customers will be defined as "commercial."</p>	
RATE	
<p>The monthly amount computed under each of the rate schedules to which this Demand-Side Management Cost Recovery Mechanism is applicable shall be increased or decreased by the DSM Cost Recovery Component (DSMRC) at a rate per kilowatt hour of monthly consumption in accordance with the following formula:</p>	
DSMRC = DCR + DRLS + DSMI + DBA + DCCR	
Where:	
DCR = DSM COST RECOVERY	
<p>The DCR shall include all expected costs that have been approved by the Commission for each twelve-month period for demand-side management programs that have been developed through a collaborative advisory process ("approved programs"). Such program costs shall include the cost of planning, developing, implementing, monitoring, and evaluating DSM programs. Program costs will be assigned for recovery purposes to the rate classes whose customers are directly participating in the program. In addition, all costs incurred by or on behalf of the collaborative process, including but not limited to costs for consultants, employees, and administrative expenses, will be recovered through the DCR. Administrative costs that are allocable to more than one rate class will be recovered from those classes and allocated by rate class on the basis of the estimated budget from each program. The cost of approved programs shall be divided by the expected kilowatt-hour sales for the upcoming twelve-month period to determine the DCR for each such rate class.</p>	
DRLS = DSM REVENUE FROM LOST SALES	
<p>Revenues from lost sales due to DSM programs implemented on and after the effective date of this tariff will be recovered as follows:</p>	
<ol style="list-style-type: none">1) For each upcoming twelve-month period, the estimated reduction in customer usage (in kWh) as determined for the approved programs shall be multiplied by the non-variable revenue requirement per kWh for purposes of determining the lost revenue to be recovered hereunder from each customer class. The non-variable revenue requirement for the Residential, Volunteer Fire Department, General Service,	

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Louisville Gas and Electric Company

P.S.C. Electric No. 8, First Revision of Original Sheet No. 86.1
Canceling P.S.C. Electric No. 8, Original Sheet No. 86.1

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
RATE (continued)	
<p>Residential Responsive Pricing, General Responsive Pricing, and LEV customer classes is defined as the weighted average price per kWh of expected billings under the energy charges contained in the RS, VFD, GS, RRP, GRP, and LEV rate schedules in the upcoming twelve-month period after deducting the variable costs included in such energy charges. The non-variable revenue requirement for each of the customer classes that are billed under demand and energy rates (rate schedules PS, ITODS, CTODS, ITODP, and CTODP) is defined as the weighted average price per kWh represented by the composite of the expected billings under the respective demand and energy charges in the upcoming twelve-month period, after deducting the variable costs included in the energy charges.</p>	
<p>2) The lost revenues for each customer class shall then be divided by the estimated class sales (in kWh) for the upcoming twelve-month period to determine the applicable DRLS surcharge. Recovery of revenue from lost sales calculated for a twelve-month period shall be included in the DRLS for thirty-six (36) months or until implementation of new rates pursuant to a general rate case, whichever comes first. Revenues from lost sales will be assigned for recovery purposes to the rate classes whose programs resulted in the lost sales.</p>	
<p>Revenues collected hereunder are based on engineering estimates of energy savings, expected program participation, and estimated sales for the upcoming twelve-month period. At the end of each such period, any difference between the lost revenues actually collected hereunder and the lost revenues determined after any revisions of the engineering estimates and actual program participation are accounted for shall be reconciled in future billings under the DSM Balance Adjustment (DBA) component.</p>	
<p>A program evaluation vendor will be selected to provide evaluation criteria against which energy savings will be estimated for that program. Each program will be evaluated after implementation and any revision of the original engineering estimates will be reflected in both (a) the retroactive true-up provided for under the DSM Balance Adjustment and (b) the prospective future lost revenues collected hereunder.</p>	
DSMI = DSM INCENTIVE	
<p>For all Energy Impact Programs except Direct Load Control, the DSM incentive amount shall be computed by multiplying the net resource savings expected from the approved programs that are to be installed during the upcoming twelve-month period times fifteen (15) percent, not to exceed five (5) percent of program expenditures. Net resource savings are defined as program benefits less utility program costs and participant costs where program benefits will be calculated on the basis of the present value of Company's avoided costs over the expected life of the program, and will include both capacity and energy savings. For the Energy Education Program, the DSM incentive amount shall be computed by multiplying the annual cost of the approved program times five (5) percent.</p>	
<p>The DSM incentive amount related to programs for Residential Rate RS, Volunteer Fire Department Rate VFD, General Service Rate GS, Power Service Rate PS, Commercial</p>	

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Louisville Gas and Electric Company

P.S.C. Electric No. 8, First Revision of Original Sheet No. 86.2
Canceling P.S.C. Electric No. 8, Original Sheet No. 86.2

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
<p>Time-of-Day Secondary Service Rate CTODS, and Commercial Time-of-Day Primary Service Rate CTODP, Residential Responsive Pricing Service Rate RRP, General Responsive Pricing Service Rate GRP, and Low Emission Vehicle Service Rider LEV shall be divided by the expected kilowatt-hour sales for the upcoming twelve-month period to determine the DSMI for such rate class. DSM incentive amounts will be assigned for recovery purposes to the rate classes whose programs created the incentive.</p>	
DBA = DSM BALANCE ADJUSTMENT	
<p>The DBA shall be calculated on a calendar-year basis and is used to reconcile the difference between the amount of revenues actually billed through the DCR, DRLS, DSMI, DCCR, and previous application of the DBA and the revenues that should have been billed, as follows:</p>	T
<ol style="list-style-type: none">1) For the DCR, the balance adjustment amount will be the difference between the amount billed in a twelve-month period from the application of the DCR unit charge and the actual cost of the approved programs during the same twelve-month period.2) For the DRLS the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DRLS unit charge and the amount of lost revenues determined for the actual DSM measures implemented during the twelve-month period.3) For the DSMI, the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DSMI unit charge and the incentive amount determined for the actual DSM measures implemented during the twelve-month period.4) For the DBA, the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DBA and the balance adjustment amount established for the same twelve-month period.	T
<p>The balance adjustment amounts determined on the basis of the above paragraphs (1)-(4) shall include interest applied to the monthly amounts, such interest to be calculated at a rate equal to the average of the "Three-Month Commercial Paper Rate" for the immediately preceding twelve-month period. The total of the balance adjustment amounts shall be divided by the expected kilowatt-hour sales for the upcoming twelve-month period to determine the DBA for such rate class. DSM balance adjustment amounts will be assigned for recovery purposes to the rate classes for which over- or under-recoveries of DSM amounts were realized.</p>	
DCCR = DSM CAPITAL COST RECOVERY	
<p>The DCCR component is the means by which the Company recovers its capital investments made for DSM programs, as well as an approved rate of return on such capital investments. The Company calculates the DCCR component as follows:</p>	T
$DCCR = [(RB) (ROR + (ROR - DR) (TR / (1 - TR)))] + OE$	
<ol style="list-style-type: none">a) RB is the total rate base for DCCR projects.b) ROR is the overall rate of return on DSM Rate Base (RB).c) DR is the composite debt rate (i.e., the cost of short- and long-term debt) embedded in ROR.	T ↓

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Louisville Gas and Electric Company

P.S.C. Electric No. 8, Third Revision of Original Sheet No. 86.3
Canceling P.S.C. Electric No. 8, Second Revision of Original Sheet No. 86.3

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
<p>d) TR is the composite federal and state income tax rate that applies to the equity return component of ROR.</p> <p>e) OE is the sum of the capital-related operating expenses (i.e., depreciation and amortization expense, property taxes, and insurance expense) of the DSM projects to which DCCR applies.</p>	
<p>The Company then allocates the DCCR component to the rate class(es) benefitting from the Company's various DSM-related capital investment(s).</p>	
CHANGES TO DSMRC	
<p>The filing of modifications to the DSMRC that require changes in the DCR component shall be made at least two months prior to the beginning of the effective period for billing.</p>	
<p>Modifications to other components of the DSMRC shall be made at least thirty (30) days prior to the effective period for billing. Each filing shall include the following information as applicable:</p>	
<ol style="list-style-type: none">1) A detailed description of each DSM program developed by the collaborative process, the total cost of each program over the twelve-month period, an analysis of expected resource savings, information concerning the specific DSM or efficiency measures to be installed, and any applicable studies that have been performed, as available.2) A statement setting forth the detailed calculation of the DCR, DRLS, DSMI, DBA, DCCR, and DSMRC.	
<p>Each change in the DSMRC shall be placed into effect with bills rendered on and after the effective date of such change.</p>	

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Louisville Gas and Electric Company

P.S.C. Electric No. 8, First Revision of Original Sheet No. 86.4
 Canceling P.S.C. Electric No. 8, Original Sheet No. 86.4

Adjustment Clause	DSM	
Demand-Side Management Cost Recovery Mechanism		
Monthly Adjustment Factors		
<u>Residential Rate RS, Volunteer Fire Department VFD, Residential Responsive Pricing Rate RRP, and Low Emission Vehicle Service LEV</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00164 per kWh	R
DSM Revenues from Lost Sales (DRLS)	\$ 0.00150 per kWh	I
DSM Incentive (DSMI)	\$ 0.00007 per kWh	R
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00048 per kWh	T/N
DSM Balance Adjustment (DBA)	<u>\$(0.00163)</u> per kWh	
Total DSMRC for Rates RS, VFD, RRP and LEV	\$ 0.00206 per kWh	I
<u>General Service Rate GS and General Responsive Pricing Rate GRP</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00080 per kWh	I
DSM Revenues from Lost Sales (DRLS)	\$ 0.00121 per kWh	R
DSM Incentive (DSMI)	\$ 0.00004 per kWh	I
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00006 per kWh	T/N
DSM Balance Adjustment (DBA)	<u>\$(0.00044)</u> per kWh	
Total DSMRC for Rates GS and GRP	\$ 0.00167 per kWh	I
<u>Commercial Service Under Power Service Rate PS</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00026 per kWh	R
DSM Revenues from Lost Sales (DRLS)	\$ 0.00066 per kWh	R
DSM Incentive (DSMI)	\$ 0.00001 per kWh	R
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00000 per kWh	T/N
DSM Balance Adjustment (DBA)	<u>\$(0.00047)</u> per kWh	
Total DSMRC for Rate PS	\$ 0.00046 per kWh	R
<u>Commercial Time-of-Day Secondary Service Rate CTODS and Commercial Time-of-Day Primary Service Rate CTODP</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00024 per kWh	R
DSM Revenues from Lost Sales (DRLS)	\$ 0.00065 per kWh	R
DSM Incentive (DSMI)	\$ 0.00001 per kWh	R
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00000 per kWh	T/N
DSM Balance Adjustment (DBA)	<u>\$(0.00032)</u> per kWh	
Total DSMRC for Rates CTODS and CTODP	\$ 0.00058 per kWh	R

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Louisville Gas and Electric Company

P.S.C. Electric No. 8, Original Sheet No. 86.5

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
Monthly Adjustment Factors	
Industrial Service Under Rate PS, Industrial Time-of-Day Secondary Service Rate ITODS Industrial Time-of-Day Primary Service Rate ITODP, and Retail Transmission Rate RTS	<u>Energy Charge</u>
DSM Cost Recovery Component (DCR)	\$ 0.00000 per kWh
DSM Revenues from Lost Sales (DRLS)	\$ 0.00000 per kWh
DSM Incentive (DSMI)	\$ 0.00000 per kWh
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00000 per kWh
DSM Balance Adjustment (DBA)	<u>\$ 0.00000</u> per kWh
Total DSMRC for Rates PS, ITODS, ITODP, and RTS	\$ 0.00000 per kWh

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LOUISVILLE GAS & ELECTRIC COMPANY

**Supporting Calculations for the
DSM Cost Recovery Mechanism**

ELECTRIC SERVICE

For Period Ending December 31, 2011

Louisville Gas and Electric - Electric Service
 DSMRC Summary

**Summary of Total DSM Recovery Component (DSMRC)
 For Period Ending December 31, 2011**

Rate Schedule	Cost Recovery Component (DCR)	Lost Sales Component (DRLS)	Incentive Component (DSMI)	Capital Component (DCCR)	Balance Adj Component (DBA)	DSM Recovery Component (DSMRC)		
Residential Service, Residential Responsive Pricing, Volunteer Fire Dept., & Low Emission Vehicle Service	RS, RRP, LEV	0.164	0.150	0.007	0.048	(0.163)	0.206	¢/kWh
General Service & General Responsive Pricing	GS & GRP	0.080	0.121	0.004	0.006	(0.044)	0.167	¢/kWh
Commercial Service under Power Service	PS	0.026	0.066	0.001	0.000	(0.047)	0.046	¢/kWh
Commercial Time-of-Day - Primary & Secondary	CTODP & CTODS	0.024	0.065	0.001	0.000	(0.032)	0.058	¢/kWh

**Summary of DSM Revenues from DSM Cost Recovery Component (DCR)
 For Period Ending December 31, 2011**

Rate Schedule		DSM Cost Recovery Total Amount	Estimated Billing Determinants		DSM Cost Recovery Component (DCR)	
Residential Service, Residential Responsive Pricing, Volunteer Fire Dept., & Low Emission Vehicle Service	RS, RRP, VFD, & LEV	\$ 6,964,031	4,247,555,598 kWh		0.164	¢/kWh
General Service & General Responsive Pricing	GS & GRP	\$ 1,272,575	1,596,923,724 kWh		0.080	¢/kWh
Commercial Service under Power Service	PS	\$ 587,876	2,254,666,857 kWh		0.026	¢/kWh
Commercial Time-of-Day - Primary & Secondary	CTODP & CTODS	\$ 181,880	764,417,584 kWh		0.024	¢/kWh
Total DCR Amount		\$ 9,006,362				

Program costs, which are categorized by residential and commercial must be allocated to the individual rate schedules. The first step, allocation between gas and electric, and between LGE and KU, is shown on "DSM Budget Allocation" page. There are currently no programs or rates applied to the industrial class of customer

Next, the DSM Program costs are further assigned to the rate schedules, which is the second and final step of the cost allocation process and is shown on the "Calculation of DCR Component from Forecast Sales" page. The total amount to be collected for each rate class is divided by the forecasted sales for that rate class to calculate the component rate in terms of ¢ / kWh.

Louisville Gas and Electric - Electric Service
DCR Summary

DSM Budget Allocation

Program	Allocation	2011
Total of All Programs		
LGE: RS et al	30.3%	6,964,031
LGE: RGS et al	10.8%	2,473,925
LGE: GS et al	5.5%	1,272,575
LGE: PS	2.6%	587,876
LGE: CTOD et al	0.8%	181,880
LGE: CGS et al	0.4%	87,771
KU: RS et al	39.6%	9,121,941
KU: GS	6.6%	1,507,270
KU: AES	0.1%	33,673
KU: PS et al	3.4%	780,174
Total	100.0%	23,011,116

Residential Audit		
LGE: RS et al	29.4%	428,887
LGE: RGS et al	20.6%	301,526
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	730,413
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	1,460,826

Residential WeCare		
LGE: RS et al	19.3%	457,069
LGE: RGS et al	30.7%	727,163
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	1,184,232
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	2,368,463

Residential Lighting		
LGE: RS et al	50.0%	2,305,030
LGE: RGS et al	0.0%	0
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	2,305,030
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	4,610,059

Residential HVAC		
LGE: RS et al	50.0%	266,683
LGE: RGS et al	0.0%	0
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	266,683
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	533,365

Program	Allocation	2011
Development & Administration		
LGE: RS et al	24.4%	307,524
LGE: RGS et al	20.6%	259,931
LGE: GS et al	3.0%	38,160
LGE: PS	0.2%	2,460
LGE: CTOD et al	0.0%	93
LGE: CGS et al	1.8%	22,060
KU: RS et al	41.2%	519,445
KU: GS	8.1%	102,067
KU: AES	0.1%	669
KU: PS et al	0.6%	8,047
Total	100.0%	1,260,457

Residential Construction		
LGE: RS et al	34.9%	482,328
LGE: RGS et al	15.1%	209,567
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	691,895
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	1,383,790

Residential Demand		
LGE: RS et al	0.0%	0
LGE: RGS et al	0.0%	0
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	0.0%	0

Responsive Smart Meters		
LGE: RS et al	95.0%	118,750
LGE: RGS et al	5.0%	6,250
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	125,000

Dealer Referral Network		
LGE: RS et al	24.4%	52,064
LGE: RGS et al	20.6%	44,006
LGE: GS et al	3.0%	6,461
LGE: PS	0.2%	417
LGE: CTOD et al	0.0%	16
LGE: CGS et al	1.8%	3,735
KU: RS et al	41.2%	87,942
KU: GS	8.1%	17,280
KU: AES	0.1%	113
KU: PS et al	0.6%	1,362
Total	100.0%	213,396

Program	Allocation	2011
Commercial Audit		
LGE: RS et al	0.0%	0
LGE: RGS et al	0.0%	0
LGE: GS et al	27.2%	883,947
LGE: PS	17.3%	562,818
LGE: CTOD et al	5.6%	180,936
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	26.7%	868,410
KU: AES	0.9%	29,483
KU: PS et al	22.4%	729,808
Total	100.0%	3,255,400

Commercial HVAC		
LGE: RS et al	0.0%	0
LGE: RGS et al	0.0%	0
LGE: GS et al	46.9%	236,801
LGE: PS	3.0%	15,288
LGE: CTOD et al	0.1%	576
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	46.1%	232,767
KU: AES	0.3%	1,527
KU: PS et al	3.6%	18,351
Total	100.0%	505,290

Commercial Demand		
LGE: RS et al	0.0%	0
LGE: RGS et al	0.0%	0
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	0.0%	0

Education & Information		
LGE: RS et al	24.4%	863,956
LGE: RGS et al	20.6%	730,247
LGE: GS et al	3.0%	107,207
LGE: PS	0.2%	6,912
LGE: CTOD et al	0.0%	261
LGE: CGS et al	1.8%	61,976
KU: RS et al	41.2%	1,459,325
KU: GS	8.1%	286,746
KU: AES	0.1%	1,881
KU: PS et al	0.6%	22,606
Total	100.0%	3,541,117

Louisville Gas and Electric - Electric Service
DCR Summary

Calculation of DCR Component from Forecast Sales
For Period Ending December 31, 2011

Forecast Sales kWh	Residential Service RS et al	General Service GS et al	Power Service PS	Commercial Time of Day CTOD et al
January 2011	404,063,721	136,218,561	194,019,099	61,565,080
February 2011	339,505,683	129,250,724	179,210,069	57,133,205
March 2011	312,019,361	130,394,214	188,560,504	62,843,642
April 2011	268,680,697	124,078,062	183,322,610	64,603,138
May 2011	289,398,942	128,046,122	189,119,134	65,677,042
June 2011	419,283,385	145,793,012	200,221,615	73,462,883
July 2011	507,432,530	154,412,228	203,171,574	70,987,017
August 2011	489,535,649	165,180,689	217,165,294	73,036,492
September 2011	357,997,169	127,359,940	188,110,238	53,266,445
October 2011	247,636,586	121,738,633	172,654,085	68,750,683
November 2011	265,652,859	112,786,825	170,043,921	56,146,792
December 2011	346,349,016	121,664,714	169,068,714	56,945,165
Total	4,247,555,598	1,596,923,724	2,254,666,857	764,417,584
Total Program Costs	\$ 6,964,031	\$ 1,272,575	\$ 587,876	\$ 181,880
DCR Factor in ¢ per kWh	0.164	0.080	0.026	0.024

Louisville Gas and Electric - Electric Service
DRLS Summary

**Summary of DSM Revenues from DSM Lost Sales Component (DRLS)
For Period Ending December 31, 2011**

Rate Schedule		Lost Net Revenues Total Amount	Estimated Billing Determinants		DSM Revenue from Lost Sales Component (DCR)	
Residential Service, Residential Responsive Pricing, Volunteer Fire Dept., & Low Emission Vehicle Service	RS, RRP, VFD, & LEV	\$ 6,358,121	4,247,555,598 kWh		0.150	¢/kWh
General Service & General Responsive Pricing	GS & GRP	\$ 1,929,178	1,596,923,724 kWh		0.121	¢/kWh
Commercial Service under Power Service	PS	\$ 1,486,084	2,254,666,857 kWh		0.066	¢/kWh
Commercial Time-of-Day - Primary & Secondary	CTODP & CTODS	\$ 493,608	764,417,584 kWh		0.065	¢/kWh
Total DRLS Amount		\$ 10,266,992				

Lost sales from each of the programs are stated in the original filings for the programs. These lost sales are then attributed to rate class by a similar method to that carried out with the direct cost component; that is rate classes which achieve greater energy savings are allocated greater lost sales.

Louisville Gas and Electric - Electric Service
DRLS Summary

Calculation of DCR Component from Forecast Sales
For Period Ending December 31, 2011

Forecast Sales kWh	Residential Service RS et al	General Service GS et al	Power Service PS	Commercial Time of Day CTOD et al
January 2011	404,063,721	136,218,561	194,019,099	61,565,080
February 2011	339,505,683	129,250,724	179,210,069	57,133,205
March 2011	312,019,361	130,394,214	188,560,504	62,843,642
April 2011	268,680,697	124,078,062	183,322,610	64,603,138
May 2011	289,398,942	128,046,122	189,119,134	65,677,042
June 2011	419,283,385	145,793,012	200,221,615	73,462,883
July 2011	507,432,530	154,412,228	203,171,574	70,987,017
August 2011	489,535,649	165,180,689	217,165,294	73,036,492
September 2011	357,997,169	127,359,940	188,110,238	53,266,445
October 2011	247,636,586	121,738,633	172,654,085	68,750,683
November 2011	265,652,859	112,786,825	170,043,921	56,146,792
December 2011	346,349,016	121,664,714	169,068,714	56,945,165
Total	4,247,555,598	1,596,923,724	2,254,666,857	764,417,584
Total Energy Savings	108,131,314	25,417,370	35,982,662	11,951,774
Non-variable Revenue per kWh	0.0588	0.0759	0.0413	0.0413
Lost Net Revenue	\$ 6,358,121	\$ 1,929,178	\$ 1,486,084	\$ 493,608
DRLS Factor in ¢ per kWh	0.150	0.121	0.066	0.065

**Summary of DSM Revenues from DSM Incentive Component (DSMI)
 For Period Ending December 31, 2011**

Rate Schedule		DSM Incentive Total Amount	Estimated Billing Determinants		DSM Incentive Component (DSMI)	
Residential Service, Residential Responsive Pricing, Volunteer Fire Dept., & Low Emission Vehicle Service	RS, RRP, VFD, & LEV	\$ 311,862	4,247,555,598 kWh		0.007	¢/kWh
General Service & General Responsive Pricing	GS & GRP	\$ 61,721	1,596,923,724 kWh		0.004	¢/kWh
Commercial Service under Power Service	PS	\$ 29,271	2,254,666,857 kWh		0.001	¢/kWh
Commercial Time-of-Day - Primary & Secondary	CTODP & CTODS	\$ 9,089	764,417,584 kWh		0.001	¢/kWh
Total DSMI Amount		\$ 411,943				

Incentives for each individual program is calculated as 15% of Net Resource Benefits (as specified in the California Standardized Tests) capped at 5% of program costs. Nearly all programs hit the 5% cost cap. The incentive by programs is then allocated across the rate classes using the same method as the cost recovery component.

Louisville Gas and Electric - Electric Service
DSMI Summary

Calculation of DSMI Component from Forecast Sales
For Period Ending December 31, 2011

Forecast Sales kWh	Residential Service RS et al	General Service GS et al	Power Service PS	Commercial Time of Day CTOD et al
January 2011	404,063,721	136,218,561	194,019,099	61,565,080
February 2011	339,505,683	129,250,724	179,210,069	57,133,205
March 2011	312,019,361	130,394,214	188,560,504	62,843,642
April 2011	268,680,697	124,078,062	183,322,610	64,603,138
May 2011	289,398,942	128,046,122	189,119,134	65,677,042
June 2011	419,283,385	145,793,012	200,221,615	73,462,883
July 2011	507,432,530	154,412,228	203,171,574	70,987,017
August 2011	489,535,649	165,180,689	217,165,294	73,036,492
September 2011	357,997,169	127,359,940	188,110,238	53,266,445
October 2011	247,636,586	121,738,633	172,654,085	68,750,683
November 2011	265,652,859	112,786,825	170,043,921	56,146,792
December 2011	346,349,016	121,664,714	169,068,714	56,945,165
Total	4,247,555,598	1,596,923,724	2,254,666,857	764,417,584
Total Program Incentive	\$ 311,862	\$ 61,721	\$ 29,271	\$ 9,089
DSMI Factor in ¢ per kWh	0.007	0.004	0.001	0.001

**Summary of DSM Revenues from DSM Capital Cost Recovery Component (DCCR)
For Period Ending December 31, 2011**

Rate Schedule		DSM Rate of Return Total Amount	Estimated Billing Determinants		DSM Capital Cost Recovery (DCCR)	
Residential Service, Residential Responsive Pricing, Volunteer Fire Dept., & Low Emission Vehicle Service	RS, RRP, VFD, & LEV	\$ 2,028,416	4,247,555,598 kWh		0.048	¢/kWh
General Service & General Responsive Pricing	GS & GRP	\$ 99,004	1,596,923,724 kWh		0.006	¢/kWh
Commercial Service under Power Service	PS	\$ 6,384	2,254,666,857 kWh		0.000	¢/kWh
Commercial Time-of-Day - Primary & Secondary	CTODP & CTODS	\$ 241	764,417,584 kWh		0.000	¢/kWh
Total DCCR Amount		\$ 2,134,043				

The DSM Capital Cost Recovery Component (DCCR), allows the Companies' to earn an approved rate of return on equity exclusively for the capital expenditures. The Companies' return on equity is equal to 10.50%. The inclusion of this methodology will spread the cost of this facility/asset over its useful life and spread the billing impact to the customers over its useful life.

**Calculation of Total E(m) and Jurisdictional Surcharge Billing Factor
For Period Ending December 31, 2011**

Calculation of Total E(m)

$E(m) = [(RB) (ROR+(ROR -DR)(TR/(1-TR)))] + OE$, where

RB	=	DSM Rate Base	=	\$	945,207
ROR	=	Rate of Return on the DSM Rate Base	=		7.53%
DR	=	Debt Rate (both short-term and long-term debt)	=		1.82%
TR	=	Composite Federal & State Income Tax Rate	=		35.71%
OE	=	Operating Expenses			

DSM Plans

RB		=	\$	945,207
(ROR + (ROR - DR) (TR / (1 - TR)))		=		10.70%
OE		=	\$	2,032,866
E(m)		=	\$	2,134,043

E(m) by Rate Class

Electric	Residential Service	RS et al	\$	2,028,416
	General Service	GS et al	\$	99,004
	Power Service	PS	\$	6,384
	Commercial T-of-D	CTOD et al	\$	241
	Total		\$	2,134,043

**Calculation of Base Rate and Operating Expense
For Period Ending December 31, 2011**

Determination of DSM Rate Base

Eligible Plant / Capital Expenditures In Service	\$	945,207	
Eligible Accumulated Depreciation	\$	0	
CWIP Amount Excluding AFUDC	\$	0	
Eligible Net Plant / Capital Expenditures In Service		\$	945,207
Deferred Tax Balance as of January 1, 2011		\$	0
Yearly Depreciation Expense		\$	0
Yearly Property Tax Expense		\$	0
Total		\$	945,207

Determination of DSM Operating Expenses

Demand Load Conservation	Residential	\$	1,932,268
	Commercial	\$	<u>100,599</u>
	Total	\$	2,032,866
Total Operating Expenses		\$	2,032,866

Louisville Gas and Electric - Electric Service
DCCR Summary

Calculation of DCCR Component from Forecast Sales
For Period Ending December 31, 2011

Forecast Sales kWh	Residential Service RS et al	General Service GS et al	Power Service PS	Commercial Time of Day CTOD et al
January 2011	404,063,721	136,218,561	194,019,099	61,565,080
February 2011	339,505,683	129,250,724	179,210,069	57,133,205
March 2011	312,019,361	130,394,214	188,560,504	62,843,642
April 2011	268,680,697	124,078,062	183,322,610	64,603,138
May 2011	289,398,942	128,046,122	189,119,134	65,677,042
June 2011	419,283,385	145,793,012	200,221,615	73,462,883
July 2011	507,432,530	154,412,228	203,171,574	70,987,017
August 2011	489,535,649	165,180,689	217,165,294	73,036,492
September 2011	357,997,169	127,359,940	188,110,238	53,266,445
October 2011	247,636,586	121,738,633	172,654,085	68,750,683
November 2011	265,652,859	112,786,825	170,043,921	56,146,792
December 2011	346,349,016	121,664,714	169,068,714	56,945,165
Total	4,247,555,598	1,596,923,724	2,254,666,857	764,417,584
Total DCCR Program Component	\$ 2,028,416	\$ 99,004	\$ 6,384	\$ 241
DCCR Factor in ¢ per kWh	0.048	0.006	0.000	0.000

Rate Base by Program
For Period Ending December 31, 2011

Rate Base by Program

Demand Load Conservation	Residential	\$	898,225
	Commercial	\$	<u>46,982</u>
	Total	\$	945,207

Allocation between Residential and Commercial

Residential	\$	898,225
Commercial	\$	<u>46,982</u>
Total	\$	945,207

EXHIBIT LEB-1
LG&E ELECTRIC
RED-LINE VERSION

Louisville Gas and Electric Company

P.S.C. Electric No. 8, First Revision of Original Sheet No. 86
Canceling P.S.C. Electric No. 8, Original Sheet No. 86

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
<p>APPLICABLE In all territory served.</p>	
<p>AVAILABILITY OF SERVICE This schedule is mandatory to Residential Rate RS, Volunteer Fire Department Rate VFD, General Service Rate GS, Power Service Rate PS, Industrial Time-of-Day Secondary Service Rate ITODS, Commercial Time-of-Day Secondary Service Rate CTODS, Industrial Time-of-Day Primary Service Rate ITODP, Commercial Time-of-Day Primary Service Rate CTODP, Retail Transmission Service Rate RTS, Residential Responsive Pricing Service Rate RRP, General Responsive Pricing Service Rate RRP, and Low Emission Vehicle Service Rider LEV. Industrial customers who elect not to participate in a demand-side management program hereunder shall not be assessed a charge pursuant to this mechanism. For purposes of rate application hereunder, non-residential customers will be considered "industrial" if they are primarily engaged in a process or processes <u>that create or change raw or unfinished materials into another form or product, and/or in accordance with the North American Industry Classification System, Sections 21, 22, 31, 32, and 33.</u> All other non-residential customers will be defined as "commercial."</p>	
<p>RATE The monthly amount computed under each of the rate schedules to which this Demand-Side Management Cost Recovery Mechanism is applicable shall be increased or decreased by the DSM Cost Recovery Component (DSMRC) at a rate per kilowatt hour of monthly consumption in accordance with the following formula:</p>	
$\text{DSMRC} = \text{DCR} + \text{DRLS} + \text{DSMI} + \text{DBA} + \text{DCCR}$	
<p>Where:</p>	
<p>DCR = DSM COST RECOVERY The DCR shall include all expected costs <u>that have been approved by the Commission for each twelve-month period for demand-side management programs that have been developed through a collaborative advisory process ("approved programs").</u> Such program costs shall include the cost of planning, developing, implementing, monitoring, and evaluating DSM programs. Program costs will be assigned for recovery purposes to the rate classes whose customers are directly participating in the program. In addition, all costs incurred by or on behalf of the collaborative process, including but not limited to costs for consultants, employees, and administrative expenses, will be recovered through the DCR. Administrative costs that are allocable to more than one rate class will be recovered from those classes and allocated by rate class on the basis of the estimated budget from each program. The cost of approved programs shall be divided by the expected kilowatt-hour sales for the upcoming twelve-month period to determine the DCR for <u>each</u> such rate class.</p>	
<p>DRLS = DSM REVENUE FROM LOST SALES Revenues from lost sales due to DSM programs implemented on and after the effective date of this tariff <u>will be recovered as follows:</u></p>	
<p>1) For each upcoming twelve-month period, the estimated reduction in customer usage (in kWh) as determined for the approved programs shall be multiplied by the non-variable revenue requirement per kWh for purposes of determining the lost revenue to be recovered hereunder from each customer class. The non-variable revenue requirement for the Residential, Volunteer Fire Department, General Service,</p>	

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Date of Issue: April 14, 2011
 Date Effective: May 14, 2011
 Issued By: Lonnie E. Bellar, Vice President, State Regulation and Rates, Louisville, Kentucky

Louisville Gas and Electric Company

P.S.C. Electric No. 8, First Revision of Original Sheet No. 86.1
Canceling P.S.C. Electric No. 8, Original Sheet No. 86.1

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
RATE (continued)	
<p>Residential Responsive Pricing, General Responsive Pricing, and LEV customer classes is defined as the weighted average price per kWh of expected billings under the energy charges contained in the RS, VFD, GS, RRP, GRP, and LEV rate schedules in the upcoming twelve-month period after deducting the variable costs included in such energy charges.</p> <p>The non-variable revenue requirement for each of the customer classes that are billed under demand and energy rates (rate schedules PS, ITODS, CTODS, ITODP, and CTODP) is defined as the weighted average price per kWh represented by the composite of the expected billings under the respective demand and energy charges in the upcoming twelve-month period, after deducting the variable costs included in the energy charges.</p> <p>2) The lost revenues for each customer class shall then be divided by the estimated class sales (in kWh) for the upcoming twelve-month period to determine the applicable DRLS surcharge. Recovery of revenue from lost sales calculated for a twelve-month period shall be included in the DRLS for thirty-six (36) months or until implementation of new rates pursuant to a general rate case, whichever comes first. Revenues from lost sales will be assigned for recovery purposes to the rate classes whose programs resulted in the lost sales.</p> <p>Revenues collected hereunder are based on engineering estimates of energy savings, expected program participation, and estimated sales for the upcoming twelve-month period. At the end of each such period, any difference between the lost revenues actually collected hereunder and the lost revenues determined after any revisions of the engineering estimates and actual program participation are accounted for shall be reconciled in future billings under the DSM Balance Adjustment (DBA) component.</p> <p>A program evaluation vendor will be selected to provide evaluation criteria against which energy savings will be estimated for that program. Each program will be evaluated after implementation and any revision of the original engineering estimates will be reflected in both (a) the retroactive true-up provided for under the DSM Balance Adjustment and (b) the prospective future lost revenues collected hereunder.</p> <p>DSMI = DSM INCENTIVE For all Energy Impact Programs except Direct Load Control, the DSM incentive amount shall be computed by multiplying the net resource savings expected from the approved programs that are to be installed during the upcoming twelve-month period times fifteen (15) percent, not to exceed five (5) percent of program expenditures. Net resource savings are defined as program benefits less utility program costs and participant costs where program benefits will be calculated on the basis of the present value of Company's avoided costs over the expected life of the program, and will include both capacity and energy savings. For the Energy Education Program, the DSM incentive amount shall be computed by multiplying the annual cost of the approved program times five (5) percent.</p> <p>The DSM incentive amount related to programs for Residential Rate RS, Volunteer Fire Department Rate VFD, General Service Rate GS, Power Service Rate PS, Commercial</p>	

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Louisville Gas and Electric Company

P.S.C. Electric No. 8, First Revision of Original Sheet No. 86.2
Canceling P.S.C. Electric No. 8, Original Sheet No. 86.2

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
<p>Time-of-Day Secondary Service Rate CTODS, and Commercial Time-of-Day Primary Service Rate CTODP, Residential Responsive Pricing Service Rate RRP, General Responsive Pricing Service Rate GRP, and Low Emission Vehicle Service Rider LEV shall be divided by the expected kilowatt-hour sales for the upcoming twelve-month period to determine the DSMI for such rate class. DSM incentive amounts will be assigned for recovery purposes to the rate classes whose programs created the incentive.</p> <p>DBA = DSM BALANCE ADJUSTMENT</p> <p>The DBA shall be calculated on a <u>calendar-year</u> basis and is used to reconcile the difference between the amount of revenues actually billed through the DCR, DRLS, DSMI, <u>DCCR</u>, and previous application of the DBA and the revenues <u>that should have</u> been billed, as follows:</p> <ol style="list-style-type: none"> 1) For the DCR, the balance adjustment amount will be the difference between the amount billed in a twelve-month period from the application of the DCR unit charge and the actual cost of the approved programs during the same twelve-month period. 2) For the DRLS the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DRLS unit charge and the amount of lost revenues determined for the actual DSM measures implemented during the twelve-month period. 3) For the DSMI, the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DSMI unit charge and the incentive amount determined for the actual DSM measures implemented during the twelve-month period. 4) For the DBA, the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DBA and the balance adjustment amount established for the same twelve-month period. <p>The balance adjustment amounts determined on the basis of the above paragraphs (1)-(4) shall include interest applied to the monthly amounts, such interest to be calculated at a rate equal to the average of the "<u>Three-Month, Commercial Paper Rate</u>" for the immediately preceding twelve-month period. The total of the balance adjustment amounts shall be divided by the expected kilowatt-hour sales for the upcoming twelve-month period to determine the DBA for such rate class. DSM balance adjustment amounts will be assigned for recovery purposes to the rate classes <u>for which over- or under-recoveries</u> of DSM amounts were realized.</p> <p>DCCR = DSM CAPITAL COST RECOVERY</p> <p>The DCCR component is the means by which the Company recovers its capital investments made for DSM programs, as well as an approved rate of return on such capital investments. The Company calculates the DCCR component as follows:</p> $DCCR = [(RB) (ROR + (ROR - DR) (TR / (1 - TR)))] + OE$ <ol style="list-style-type: none"> a) <u>RB is the total rate base for DCCR projects.</u> b) <u>ROR is the overall rate of return on DSM Rate Base (RB).</u> c) <u>DR is the composite debt rate (i.e., the cost of short- and long-term debt) embedded in ROR.</u> 	

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Louisville Gas and Electric Company

P.S.C. Electric No. 8, Third Revision of Original Sheet No. 86.3
 Canceling P.S.C. Electric No. 8, Second Revision of Original Sheet No. 86.3

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
<p><u>d) TR is the composite federal and state income tax rate that applies to the equity return component of ROR.</u></p> <p><u>e) OE is the sum of the capital-related operating expenses (i.e., depreciation and amortization expense, property taxes, and insurance expense) of the DSM projects to which DCCR applies.</u></p> <p><u>The Company then allocates the DCCR component to the rate class(es) benefitting from the Company's various DSM-related capital investment(s).</u></p> <p>CHANGES TO DSMRC</p> <p>The filing of modifications to the DSMRC <u>that require changes in the DCR component</u> shall be made at least two months prior to the beginning of the effective period for billing.</p> <p>Modifications to other components of the DSMRC shall be made at least thirty (30) days prior to the effective period for billing. Each filing shall include the following information as applicable:</p> <ol style="list-style-type: none"> 1) A detailed description of each DSM program developed by the collaborative process, the total cost of each program over the twelve-month period, an analysis of expected resource savings, information concerning the specific DSM or efficiency measures to be installed, and any applicable studies <u>that have been performed, as available.</u> 2) A statement setting forth the detailed calculation of the DCR, DRLS, DSMI, DBA, <u>DCCR, and DSMRC.</u> <p>Each change in the DSMRC shall be placed into effect with bills rendered on and after the effective date of such change.</p>	

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<p>Deleted: Residential Rate RS, Volunteer Fire¶ Department VFD, Residential ¶ Responsive Pricing Rate RRP, and ¶ <u>Low Emission Vehicle Service LEV - Energy Charge¶</u> ¶ DSM Cost Recovery Component (DCR) . \$ 0.00225 . per kWh¶ DSM Revenues from Lost Sales (DRLS) . \$ 0.00126 . per kWh¶ DSM Incentive (DSMI) . \$ 0.00012 . per kWh¶ DSM Balance Adjustment (DBA) . \$(0.00013) . per kWh¶ Total DSMRC for Rates RS, VFD, RRP and LEV . \$. 0.00350 . per kWh . . ¶</p>	T
<p>¶ ¶ General Service Rate GS and ¶ <u>General Responsive Pricing Rate GRP Energy Charge¶</u> ¶ DSM Cost Recovery Component (DCR) . \$ 0.00064 . per kWh¶ DSM Revenues from Lost Sales (DRLS) . \$ 0.00124 . per kWh¶ DSM Incentive (DSMI) . \$ 0.00003 . per kWh¶ DSM Balance Adjustment (DBA) . \$(0.00078) . per kWh¶ Total DSMRC for Rates GS and GRP . \$ 0.00113 . per kWh¶ ¶ ¶ <u>Commercial Service Under Power Service Rate PS - Energy Charge¶</u> ¶ DSM Cost Recovery Component (DCR) . \$ 0.00047 . per kWh¶ DSM Revenues from Lost Sales (DRLS) . \$ 0.00068 . per kWh¶ DSM Incentive (DSMI) . \$ 0.00002 . per kWh¶ DSM Balance Adjustment (DBA) . \$(0.00059) . per kWh¶ Total DSMRC for Rate PS . \$ 0.00058 . per kWh¶ ¶ ¶ Commercial Time-of-Day Secondary Service Rate CTODS ¶ and Commercial Time-of-Day Primary Service Rate CTODP Energy Charge¶</p>	T T T T
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Louisville Gas and Electric Company

P.S.C. Electric No. 8, First Revision of Original Sheet No. 86.4
Canceling P.S.C. Electric No. 8, Original Sheet No. 86.4

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
Monthly Adjustment Factors	
<u>Residential Rate RS, Volunteer Fire Department VFD, Residential Responsive Pricing Rate RRP, and Low Emission Vehicle Service LEV</u>	
	Energy Charge
DSM Cost Recovery Component (DCR)	\$ 0.00164 per kWh
DSM Revenues from Lost Sales (DRLS)	\$ 0.00150 per kWh
DSM Incentive (DSMI)	\$ 0.00007 per kWh
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00048 per kWh
DSM Balance Adjustment (DBA)	\$ (0.00163) per kWh
Total DSMRC for Rates RS, VFD, RRP and LEV	\$ 0.00206 per kWh
<u>General Service Rate GS and General Responsive Pricing Rate GRP</u>	
	Energy Charge
DSM Cost Recovery Component (DCR)	\$ 0.00080 per kWh
DSM Revenues from Lost Sales (DRLS)	\$ 0.00121 per kWh
DSM Incentive (DSMI)	\$ 0.00004 per kWh
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00006 per kWh
DSM Balance Adjustment (DBA)	\$ (0.00044) per kWh
Total DSMRC for Rates GS and GRP	\$ 0.00167 per kWh
<u>Commercial Service Under Power Service Rate PS</u>	
	Energy Charge
DSM Cost Recovery Component (DCR)	\$ 0.00026 per kWh
DSM Revenues from Lost Sales (DRLS)	\$ 0.00066 per kWh
DSM Incentive (DSMI)	\$ 0.00001 per kWh
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00000 per kWh
DSM Balance Adjustment (DBA)	\$ (0.00047) per kWh
Total DSMRC for Rate PS	\$ 0.00046 per kWh
<u>Commercial Time-of-Day Secondary Service Rate CTODS and Commercial Time-of-Day Primary Service Rate CTODP</u>	
	Energy Charge
DSM Cost Recovery Component (DCR)	\$ 0.00024 per kWh
DSM Revenues from Lost Sales (DRLS)	\$ 0.00065 per kWh
DSM Incentive (DSMI)	\$ 0.00001 per kWh
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00000 per kWh
DSM Balance Adjustment (DBA)	\$ (0.00032) per kWh
Total DSMRC for Rates CTODS and CTODP	\$ 0.00058 per kWh

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- Industrial Service Under Rate PS
- Industrial Time-of-Day Secondary Service Rate ITODS
- Industrial Time-of-Day Primary Service Rate ITODP
- and Retail Transmission Rate RTS
- Energy Charge
- DSM Cost Recovery Component (DCR) \$ 0.00000 per kWh
- DSM Revenues from Lost Sales (DRLS) \$ 0.00000 per kWh
- DSM Incentive (DSMI) \$ 0.00000 per kWh
- DSM Balance Adjustment (DBA) \$ 0.00000 per kWh
- Total DSMRC for Rates PS, ITODS, ITODP, and RTS \$ 0.00000 per kWh
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Louisville Gas and Electric Company

P.S.C. Electric No. 8, Original Sheet No. 86.5

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
Monthly Adjustment Factors	
Industrial Service Under Rate PS, Industrial Time-of-Day Secondary Service Rate ITODS Industrial Time-of-Day Primary Service Rate ITODP, and Retail Transmission Rate RTS	
	<u>Energy Charge</u>
DSM Cost Recovery Component (DCR)	\$ 0.00000 per kWh
DSM Revenues from Lost Sales (DRLS)	\$ 0.00000 per kWh
DSM Incentive (DSMI)	\$ 0.00000 per kWh
<u>DSM Capital Cost Recovery Component (DCCR)</u>	<u>\$ 0.00000 per kWh</u>
DSM Balance Adjustment (DBA)	<u>\$ 0.00000 per kWh</u>
Total DSMRC for Rates PS, ITODS, ITODP, and RTS	\$ 0.00000 per kWh

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EXHIBIT LEB-1
LG&E GAS
CLEAN VERSION

Louisville Gas and Electric Company

P.S.C. Gas No. 8, First Revision of Original Sheet No. 86
Canceling P.S.C. Gas No. 8, Original Sheet No. 86

Adjustment Clause

DSM

Demand-Side Management Cost Recovery Mechanism

APPLICABLE

In all territory served.

AVAILABILITY OF SERVICE

This schedule is mandatory to Residential Gas Service Rate RGS, Volunteer Fire Department Rate VFD, Firm Commercial Gas Service Rate CGS, Firm Industrial Gas Service Rate IGS, As-Available Gas Service Rate AAGS, Firm Gas Transportation Rate FT, and Gas Transportation Service/Standby Rider TS. Any industrial customers who also receive electric service under Power Service Rate PS, Industrial Time-of-Day Secondary Service ITODS, Industrial Time-of-Day Primary Service ITODP, Retail Transmission Service Rate RTS, or Fluctuating Load Service Rate FLS and have elected not to participate in a demand-side management program hereunder shall not be assessed a charge pursuant to this mechanism.

RATE

The monthly amount computed under each of the rate schedules to which this Demand-Side Management Cost Recovery Mechanism is applicable shall be increased or decreased by the DSM Cost Recovery Component (DSMRC) at a rate per 100 cubic feet (Ccf) of monthly gas consumption in accordance with the following formula:

$$\text{DSMRC} = \text{DCR} + \text{DRLS} + \text{DSMI} + \text{DBA} + \text{DCCR}$$

Where:

DCR = DSM COST RECOVERY

The DCR shall include all expected costs that have been approved by the Commission for each twelve-month period for demand-side management programs that have been developed through a collaborative advisory process ("approved programs"). Such program costs shall include the cost of planning, developing, implementing, monitoring, and evaluating DSM programs. Program costs will be assigned for recovery purposes to the rate classes whose customers are directly participating in the program. In addition, all costs incurred by or on behalf of the collaborative process, including but not limited to costs for consultants, employees and administrative expenses, will be recovered through the DCR. Administrative costs that are allocable to more than one rate class will be recovered from those classes and allocated by rate class on the basis of the estimated budget from each program.

The cost of approved programs shall be divided by the expected Ccf sales for the upcoming twelve-month period to determine the DCR for such rate class.

DRLS = DSM REVENUE FROM LOST SALES

Revenues from lost sales due to DSM programs implemented on and after the effective date of this tariff will be recovered as follows:

1. For each upcoming twelve-month period, the estimated reduction in customer usage (in Ccf) as determined for the approved programs shall be multiplied by the non-variable revenue requirement per Ccf for purposes of determining the lost revenue to be recovered hereunder for each customer class. The non-variable revenue requirement is defined as the weighted average price per Ccf of expected Distribution Cost Component billings for the customer classes.

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Louisville Gas and Electric Company

P.S.C. Gas No. 8, First Revision of Original Sheet No. 86.1
Canceling P.S.C. Gas No. 8, Original Sheet No. 86.1

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
<p>2. The lost revenues for each customer class shall then be divided by the estimated class sales (in Ccf) for the upcoming twelve-month period to determine the applicable DRLS surcharge. Recovery of revenues from lost sales calculated for a twelve-month period shall be included in the DRLS for thirty-six (36) months or until implementation of new rates pursuant to a general rate case. For recovery purposes, the lost sales revenues will be assigned to the rate classes whose programs resulted in the lost sales.</p>	
<p>Revenues collected hereunder are based on engineering estimates of energy savings, expected program participation and estimated sales for the upcoming twelve-month period. At the end of each such period, any difference between the lost revenues actually collected hereunder and the lost revenues determined after any revisions of the engineering estimates and actual program participation are accounted for shall be reconciled in future billings under the DSM Balance Adjustment (DBA) component.</p>	
<p>A program evaluation vendor will be selected to provide evaluation criteria against which energy savings will be estimated for that program. Each program will be evaluated after implementation and any revision of the original engineering estimates will be reflected in both (a) the retroactive true-up provided for under the DSM Balance Adjustment and (b) the prospective future lost revenues collected hereunder.</p>	
<p>DSMI = DSM INCENTIVE.</p>	
<p>For all Energy Impact Programs except Direct Load Control, the DSM incentive amount shall be computed by multiplying the net resource savings expected from the approved programs that are to be installed during the upcoming twelve-month period times fifteen (15) percent, not to exceed five (5) percent of program expenditures. Net resource savings are defined as program benefits less utility program costs and participant costs where program benefits will be calculated on the basis of the present value of Company's avoided costs over the expected life of the program, and will include both capacity and energy savings. For the Energy Education Program, the DSM incentive amount shall be computed by multiplying the annual cost of the approved program times five (5) percent.</p>	<p>T</p> <p>T</p> <p>T</p>
<p>The DSM incentive amount shall be divided by the expected Ccf sales for the upcoming twelve-month period to determine the DSMI. DSM incentive amounts will be assigned for recovery purposes to the rate classes whose programs created the incentive.</p>	
<p>DBA = DSM BALANCE ADJUSTMENT.</p>	
<p>The DBA shall be calculated on a calendar year basis and is used to reconcile the difference between the amount of revenues actually billed through the DCR, DRLS, DSMI, DCCR, and previous application of the DBA and the revenues that should have been billed, as follows:</p>	<p>T</p>

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Louisville Gas and Electric Company

P.S.C. Gas No. 8, First Revision of Original Sheet No. 86.2
Canceling P.S.C. Gas No. 8, Original Sheet No. 86.2

Adjustment Clause	DSM	
Demand-Side Management Cost Recovery Mechanism		
<p>(1) For the DCR, the balance adjustment amount will be the difference between the amount billed in a twelve-month period from the application of the DCR unit charge and the actual cost of the approved programs during the same twelve-month period.</p> <p>(2) For the DRLS the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DRLS unit charge and the amount of lost revenues determined for the actual DSM measures implemented during the twelve-month period.</p> <p>(3) For the DSMI, the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DSMI unit charge and the incentive amount determined for the actual DSM measures implemented during the twelve-month period.</p> <p>(4) For the DBA, the balance adjustment amount will be determined by calculating the difference between the amount billed during the twelve-month period from application of the DBA unit charges and the balance adjustment amount established for the same twelve-month period.</p>	T	
<p>The balance adjustment amounts determined on the basis of the above paragraphs (1)-(4) shall include interest to be calculated at a rate equal to the average of the "Three-Month Commercial Paper Rate" for the immediately preceding twelve-month period. The balance adjustment amounts, plus interest, shall be divided by the expected Ccf sales for the upcoming twelve-month period to determine the DBA for each rate class. DSM balance adjustment amounts will be assigned for recovery purposes to the rate classes for which over- or under-recoveries of DSM amounts were realized.</p>		T
DCCR = DSM CAPITAL COST RECOVERY		T
<p>The DCCR component is the means by which the Company recovers its capital investments made for DSM programs, as well as an approved rate of return on such capital investments. The Company calculates the DCCR component as follows:</p>		T
$DCCR = [(RB) (ROR + (ROR - DR) (TR / (1 - TR)))] + OE$		T
<p>a) RB is the total rate base for DCCR projects.</p> <p>b) ROR is the overall rate of return on DSM Rate Base (RB).</p> <p>c) DR is the composite debt rate (i.e., the cost of short- and long-term debt) embedded in ROR.</p> <p>d) TR is the composite federal and state income tax rate that applies to the equity return component of ROR.</p> <p>e) OE is the sum of the capital-related operating expenses (i.e., depreciation and amortization expense, property taxes, and insurance expense) of the DSM projects to which DCCR applies.</p>		T
<p>The Company then allocates the DCCR component to the rate class(es) benefitting from the Company's various DSM-related capital investment(s).</p>		T

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LOUISVILLE GAS & ELECTRIC COMPANY

**Supporting Calculations for the
DSM Cost Recovery Mechanism**

GAS SERVICE

For Period Ending December 31, 2011

Louisville Gas and Electric - Gas Service
 DSMRC Summary

**Summary of Total DSM Recovery Component (DSMRC)
 For Period Ending December 31, 2011**

Rate Schedule		Cost Recovery Component (DCR)	Lost Sales Component (DRLS)	Incentive Component (DSMI)	Capital Component (DCCR)	Balance Adj Component (DBA)	DSM Recovery Component (DSMRC)	
Residential Gas Service & Volunteer Fire Dept.	RGS & VFD	1.238	0.172	0.057	0.552	0.379	2.398	¢/Ccf
Commercial Gas Service, As Available Gas Service, Gas Transportation Service/Standby, & Firm Transportation	CGS, AAGS, TS, & FT	0.080	0.000	0.000	0.052	(0.020)	0.112	¢/Ccf

Louisville Gas and Electric - Gas Service
 DCR Summary

**Summary of DSM Revenues from DSM Cost Recovery Component (DCR)
 For Period Ending December 31, 2011**

Rate Schedule		DSM Cost Recovery Total Amount	Estimated Billing Determinants		DSM Cost Recovery Component (DCR)	
Residential Gas Service & Volunteer Fire Dept.	RGS & VFD	\$ 2,473,925	199,837,838	Ccf	1.238	¢/Ccf
Commercial Gas Service, As Available Gas Service, Gas Transportation Service/Standby, & Firm Transportation	CGS, AAGS, TS, & FT	\$ 87,771	109,540,363	Ccf	0.080	¢/Ccf
Total DCR Amount		\$ 2,561,696				

Program costs, which are categorized by residential and commercial must be allocated to the individual rate schedules. The first step, allocation between gas and electric, and between LGE and KU, is shown on "DSM Budget Allocation" page. There are currently no programs or rates applied to the industrial class of customer

Next, the DSM Program costs are further assigned to the rate schedules, which is the second and final step of the cost allocation process and is shown on the "Calculation of DCR Component from Forecast Sales" page. The total amount to be collected for each rate class is divided by the forecasted sales for that rate class to calculate the component rate in terms of ¢ / kWh.

Louisville Gas and Electric - Gas Service
DCR Summary

DSM Budget Allocation

Program	Allocation	2011
Total of All Programs		
LGE: RS et al	30.3%	6,964,031
LGE: RGS et al	10.8%	2,473,925
LGE: GS et al	5.5%	1,272,575
LGE: PS	2.6%	587,876
LGE: CTOD et al	0.8%	181,880
LGE: CGS et al	0.4%	87,771
KU: RS et al	39.6%	9,121,941
KU: GS	6.6%	1,507,270
KU: AES	0.1%	33,673
KU: PS et al	3.4%	780,174
Total	100.0%	23,011,116

Residential Audit		
LGE: RS et al	29.4%	428,887
LGE: RGS et al	20.6%	301,526
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	730,413
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	1,460,826

Residential WeCare		
LGE: RS et al	19.3%	457,069
LGE: RGS et al	30.7%	727,163
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	1,184,232
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	2,368,463

Residential Lighting		
LGE: RS et al	50.0%	2,305,030
LGE: RGS et al	0.0%	0
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	2,305,030
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	4,610,059

Residential HVAC		
LGE: RS et al	50.0%	266,683
LGE: RGS et al	0.0%	0
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	266,683
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	533,365

Program	Allocation	2011
Development & Administration		
LGE: RS et al	24.4%	307,524
LGE: RGS et al	20.6%	259,931
LGE: GS et al	3.0%	38,160
LGE: PS	0.2%	2,460
LGE: CTOD et al	0.0%	93
LGE: CGS et al	1.8%	22,060
KU: RS et al	41.2%	519,445
KU: GS	8.1%	102,067
KU: AES	0.1%	669
KU: PS et al	0.6%	8,047
Total	100.0%	1,260,457

Residential Construction		
LGE: RS et al	34.9%	482,328
LGE: RGS et al	15.1%	209,567
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	691,895
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	1,383,790

Residential Demand		
LGE: RS et al	0.0%	0
LGE: RGS et al	0.0%	0
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	0.0%	0

Responsive Smart Meters		
LGE: RS et al	95.0%	118,750
LGE: RGS et al	5.0%	6,250
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	125,000

Dealer Referral Network		
LGE: RS et al	24.4%	52,064
LGE: RGS et al	20.6%	44,006
LGE: GS et al	3.0%	6,461
LGE: PS	0.2%	417
LGE: CTOD et al	0.0%	16
LGE: CGS et al	1.8%	3,735
KU: RS et al	41.2%	87,942
KU: GS	8.1%	17,280
KU: AES	0.1%	113
KU: PS et al	0.6%	1,362
Total	100.0%	213,396

Program	Allocation	2011
Commercial Audit		
LGE: RS et al	0.0%	0
LGE: RGS et al	0.0%	0
LGE: GS et al	27.2%	883,947
LGE: PS	17.3%	562,818
LGE: CTOD et al	5.6%	180,936
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	26.7%	868,410
KU: AES	0.9%	29,483
KU: PS et al	22.4%	729,808
Total	100.0%	3,255,400

Commercial HVAC		
LGE: RS et al	0.0%	0
LGE: RGS et al	0.0%	0
LGE: GS et al	46.9%	236,801
LGE: PS	3.0%	15,268
LGE: CTOD et al	0.1%	576
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	46.1%	232,767
KU: AES	0.3%	1,527
KU: PS et al	3.6%	18,351
Total	100.0%	505,290

Commercial Demand		
LGE: RS et al	0.0%	0
LGE: RGS et al	0.0%	0
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	0.0%	0

Education & Information		
LGE: RS et al	24.4%	863,956
LGE: RGS et al	20.6%	730,247
LGE: GS et al	3.0%	107,207
LGE: PS	0.2%	6,912
LGE: CTOD et al	0.0%	261
LGE: CGS et al	1.8%	61,976
KU: RS et al	41.2%	1,459,325
KU: GS	8.1%	286,746
KU: AES	0.1%	1,881
KU: PS et al	0.6%	22,606
Total	100.0%	3,541,117

Louisville Gas and Electric - Gas Service
DCR Summary

Calculation of DCR Component from Forecast Sales
For Period Ending December 31, 2011

Forecast Sales Ccf	Residential Gas Service RGS et al	Commercial Gas Service CGS et al
January 2011	39,021,224	20,164,414
February 2011	32,750,846	16,846,137
March 2011	27,966,817	13,941,547
April 2011	15,412,480	7,436,152
May 2011	6,332,679	4,575,013
June 2011	3,930,840	3,872,787
July 2011	3,698,263	3,371,792
August 2011	3,347,947	3,314,364
September 2011	4,290,155	3,764,326
October 2011	8,820,388	5,564,932
November 2011	19,857,122	10,129,706
December 2011	34,409,077	16,559,193
Total	199,837,838	109,540,363
Total Program Costs	\$ 2,473,925	\$ 87,771
DCR Factor in ¢ per Ccf	1.238	0.080

Louisville Gas and Electric - Gas Service
DRLS Summary

**Summary of DSM Revenues from DSM Lost Sales Component (DRLS)
For Period Ending December 31, 2011**

Rate Schedule		Lost Net Revenues Total Amount	Estimated Billing Determinants		DSM Revenue from Lost Sales Component (DCR)	
Residential Gas Service & Volunteer Fire Dept.	RGS & VFD	\$ 343,869	199,837,838	Ccf	0.172	¢/Ccf
Commercial Gas Service, As Available Gas Service, Gas Transportation Service/Standby, & Firm Transportation	CGS, AAGS, TS, & FT	\$ -	109,540,363	Ccf	0.000	¢/Ccf
Total DRLS Amount		\$ 343,869				

Lost sales from each of the programs are stated in the original filings for the programs. These lost sales are then attributed to rate class by a similar method to that carried out with the direct cost component; that is rate classes which achieve greater energy savings are allocated greater lost sales.

Louisville Gas and Electric - Gas Service
DRLS Summary

Calculation of DCR Component from Forecast Sales
For Period Ending December 31, 2011

Forecast Sales Ccf	Residential Gas Service RGS et al	Commercial Gas Service CGS et al
January 2011	39,021,224	20,164,414
February 2011	32,750,846	16,846,137
March 2011	27,966,817	13,941,547
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September 2011	4,290,155	3,764,326
October 2011	8,820,388	5,564,932
November 2011	19,857,122	10,129,706
December 2011	34,409,077	16,559,193
Total	199,837,838	109,540,363
Total Gas Savings	1,535,129	-
Non-variable Revenue per Ccf	0.2240	0.1872
Lost Net Revenue	\$ 343,869	\$ -
DRLS Factor in ¢ per Ccf	0.172	0.000

Louisville Gas and Electric - Gas Service
 DSMI Summary

**Summary of DSM Revenues from DSM Incentive Component (DSMI)
 For Period Ending December 31, 2011**

Rate Schedule		DSM Incentive Total Amount	Estimated Billing Determinants		DSM Incentive Component (DSMI)	
Residential Gas Service & Volunteer Fire Dept.	RGS & VFD	\$ 113,712	199,837,838	Ccf	0.057	¢/Ccf
Commercial Gas Service, As Available Gas Service, Gas Transportation Service/Standby, & Firm Transportation	CGS, AAGS, TS, & FT	\$ -	109,540,363	Ccf	0.000	¢/Ccf
Total DSMI Amount		\$ 113,712				

Incentives for each individual program is calculated as 15% of Net Resource Benefits (as specified in the California Standardized Tests) capped at 5% of program costs. Nearly all programs hit the 5% cost cap. The incentive by programs is then allocated across the rate classes using the same method as the cost recovery component.

Louisville Gas and Electric - Gas Service
 DSMI Summary

Calculation of DSMI Component from Forecast Sales
 For Period Ending December 31, 2011

Forecast Sales Ccf	Residential Gas Service RGS et al	Commercial Gas Service CGS et al
January 2011	39,021,224	20,164,414
February 2011	32,750,846	16,846,137
March 2011	27,966,817	13,941,547
April 2011	15,412,480	7,436,152
May 2011	6,332,679	4,575,013
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July 2011	3,698,263	3,371,792
August 2011	3,347,947	3,314,364
September 2011	4,290,155	3,764,326
October 2011	8,820,388	5,564,932
November 2011	19,857,122	10,129,706
December 2011	34,409,077	16,559,193
Total	199,837,838	109,540,363
Total Program Incentive	\$ 113,712	\$ -
DSMI Factor in ¢ per Ccf	0.057	0.000

Louisville Gas and Electric - Gas Service
DCCR Summary

**Summary of DSM Revenues from DSM Capital Cost Recovery (DCCR)
For Period Ending December 31, 2011**

Rate Schedule		DSM Rate of Return Total Amount	Estimated Billing Determinants		DSM Capital Cost Recovery (DCCR)	
Residential Gas Service & Volunteer Fire Dept.	RGS & VFD	\$ 1,102,362	199,837,838	Ccf	0.552	¢/Ccf
Commercial Gas Service, As Available Gas Service, Gas Transportation Service/Standby, & Firm Transportation	CGS, AAGS, TS, & FT	\$ 57,234	109,540,363	Ccf	0.052	¢/Ccf
Total DCCR Amount		\$ 1,159,596				

The DSM Capital Cost Recovery Component (DCCR), allows the Companies' to earn an approved rate of return on equity exclusively for the capital expenditures. The Companies' return on equity is equal to 10.50%. The inclusion of this methodology will spread the cost of this facility/asset over its useful life and spread the billing impact to the customers over its useful life.

**Calculation of Base Rate and Operating Expense
For Period Ending December 31, 2011**

Determination of DSM Rate Base

Eligible Plant / Capital Expenditures In Service	\$	513,606	
Eligible Accumulated Depreciation	\$	0	
CWIP Amount Excluding AFUDC	\$	0	
Eligible Net Plant / Capital Expenditures In Service		\$	513,606
Deferred Tax Balance as of January 1, 2011		\$	0
Yearly Depreciation Expense		\$	0
Yearly Property Tax Expense		\$	0
Total		\$	513,606

Determination of DSM Operating Expenses

Demand Load Conservation	Residential	\$	1,050,110
	Commercial	\$	54,509
	Total	\$	1,104,619

Total Operating Expenses \$ **1,104,619**

Louisville Gas and Electric - Gas Service
DCCR Summary

Calculation of DCCR Component from Forecast Sales
For Period Ending December 31, 2011

Forecast Sales Ccf	Residential Gas Service RGS et al	Commercial Gas Service CGS et al
January 2011	39,021,224	20,164,414
February 2011	32,750,846	16,846,137
March 2011	27,966,817	13,941,547
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October 2011	8,820,388	5,564,932
November 2011	19,857,122	10,129,706
December 2011	34,409,077	16,559,193
Total	199,837,838	109,540,363
Total DCCR Program Component	\$ 1,102,362	\$ 57,234
DCCR Factor in ¢ per Ccf	0.552	0.052

Rate Base by Program
For Period Ending December 31, 2011

Rate Base by Program

Demand Load Conservation	Residential	\$	488,149
	Commercial	\$	<u>25,457</u>
	Total	\$	513,606

Allocation between Residential and Commercial

Residential	\$	488,149
Commercial	\$	<u>25,457</u>
Total	\$	513,606

EXHIBIT LEB-1
LG&E GAS
RED-LINE VERSION

Louisville Gas and Electric Company

P.S.C. Gas No. 8, First Revision of Original Sheet No. 86
Canceling P.S.C. Gas No. 8, Original Sheet No. 86

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	

APPLICABLE

In all territory served.

AVAILABILITY OF SERVICE

This schedule is mandatory to Residential Gas Service Rate RGS, Volunteer Fire Department Rate VFD, Firm Commercial Gas Service Rate CGS, Firm Industrial Gas Service Rate IGS, As-Available Gas Service Rate AAGS, Firm Gas Transportation Rate FT, and Gas Transportation Service/Standby Rider TS. Any industrial customers who also receive electric service under Power Service Rate PS, Industrial Time-of-Day Secondary Service ITODS, Industrial Time-of-Day Primary Service ITODP, Retail Transmission Service Rate RTS, or Fluctuating Load Service Rate FLS and have elected not to participate in a demand-side management program hereunder shall not be assessed a charge pursuant to this mechanism.

RATE

The monthly amount computed under each of the rate schedules to which this Demand-Side Management Cost Recovery Mechanism is applicable shall be increased or decreased by the DSM Cost Recovery Component (DSMRC) at a rate per 100 cubic feet (Ccf) of monthly gas consumption in accordance with the following formula:

$$\text{DSMRC} = \text{DCR} + \text{DRLS} + \text{DSMI} + \text{DBA} + \text{DCCR}$$

Where:

DCR = DSM COST RECOVERY

The DCR shall include all expected costs ~~that have been approved by the Commission for each twelve-month period for demand-side management programs that have been developed through a collaborative advisory process ("approved programs").~~ Such program costs shall include the cost of planning, developing, implementing, monitoring, and evaluating DSM programs. Program costs will be assigned for recovery purposes to the rate classes whose customers are directly participating in the program. In addition, all costs incurred by or on behalf of the collaborative process, including but not limited to costs for consultants, employees and administrative expenses, will be recovered through the DCR. Administrative costs that are allocable to more than one rate class will be recovered from those classes and allocated by rate class on the basis of the estimated budget from each program.

The cost of approved programs shall be divided by the expected Ccf sales for the upcoming twelve-month period to determine the DCR for such rate class.

DRLS = DSM REVENUE FROM LOST SALES

Revenues from lost sales due to DSM programs implemented on and after the effective date of this tariff ~~will be recovered as follows:~~

1. For each upcoming twelve-month period, the estimated reduction in customer usage (in Ccf) as determined for the approved programs shall be multiplied by the non-variable revenue requirement per Ccf for purposes of determining the lost revenue to be recovered hereunder for each customer class. The non-variable revenue requirement is defined as the weighted average price per Ccf of expected Distribution Cost Component billings for the customer classes.

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Date of Issue: April 14, 2011

Date Effective: May 14, 2011

Issued By: Lonnie E. Bellar, Vice President, State Regulation and Rates, Louisville, Kentucky

Louisville Gas and Electric Company

P.S.C. Gas No. 8, First Revision of Original Sheet No. 86.1
Canceling P.S.C. Gas No. 8, Original Sheet No. 86.1

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
<p>2. The lost revenues for each customer class shall then be divided by the estimated class sales (in Ccf) for the upcoming twelve-month period to determine the applicable DRLS surcharge. Recovery of revenues from lost sales calculated for a twelve-month period shall be included in the DRLS for thirty-six (36) months or until implementation of new rates pursuant to a general rate case. For recovery purposes, the lost sales revenues will be assigned to the rate classes whose programs resulted in the lost sales.</p> <p>Revenues collected hereunder are based on engineering estimates of energy savings, expected program participation and estimated sales for the upcoming twelve-month period. At the end of each such period, any difference between the lost revenues actually collected hereunder and the lost revenues determined after any revisions of the engineering estimates and actual program participation are accounted for shall be reconciled in future billings under the DSM Balance Adjustment (DBA) component.</p> <p>A program evaluation vendor will be selected to provide evaluation criteria against which energy savings will be estimated for that program. Each program will be evaluated after implementation and any revision of the original engineering estimates will be reflected in both (a) the retroactive true-up provided for under the DSM Balance Adjustment and (b) the prospective future lost revenues collected hereunder.</p> <p>DSMI = DSM INCENTIVE. For all Energy Impact Programs except Direct Load Control, the DSM incentive amount shall be computed by multiplying the net resource savings expected from the approved programs that are to be installed during the upcoming twelve-month period times fifteen (15) percent, not to exceed five (5) percent of program expenditures. Net resource savings are defined as program benefits less utility program costs and participant costs where program benefits will be calculated on the basis of the present value of Company's avoided costs over the expected life of the program, and will include both capacity and energy savings. For the Energy Education Program, the DSM incentive amount shall be computed by multiplying the annual cost of the approved program times five (5) percent.</p> <p>The DSM incentive amount shall be divided by the expected Ccf sales for the upcoming twelve-month period to determine the DSMI. DSM incentive amounts will be assigned for recovery purposes to the rate classes whose programs created the incentive.</p> <p>DBA = DSM BALANCE ADJUSTMENT. The DBA shall be calculated on a calendar year basis and is used to reconcile the difference between the amount of revenues actually billed through the DCR, DRLS, DSMI, DCCR, and previous application of the DBA and the revenues that should have been billed, as follows:</p>	

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Date of Issue: April 14, 2011
 Date Effective: May 14, 2011
 Issued By: Lonnie E. Bellar, Vice President, State Regulation and Rates, Louisville, Kentucky

Louisville Gas and Electric Company

P.S.C. Gas No. 8, First Revision of Original Sheet No. 86.2
Canceling P.S.C. Gas No. 8, Original Sheet No. 86.2

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
(1) For the DCR, the balance adjustment amount will be the difference between the amount billed in a twelve-month period from the application of the DCR unit charge and the actual cost of the approved programs during the same twelve-month period.	
(2) For the DRLS the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DRLS unit charge and the amount of lost revenues determined for the actual DSM measures implemented during the twelve-month period.	
(3) For the DSMI, the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DSMI unit charge and the incentive amount determined for the actual DSM measures implemented during the twelve-month period.	
(4) For the DBA, the balance adjustment amount will be determined by calculating the difference between the amount billed during the twelve-month period from application of the DBA unit charges and the balance adjustment amount established for the same twelve-month period.	T Deleted: T
The balance adjustment amounts determined on the basis of the above paragraphs (1)-(4) shall include interest to be calculated at a rate equal to the average of the "Three-Month Commercial Paper Rate" for the immediately preceding twelve-month period. The balance adjustment amounts, plus interest, shall be divided by the expected Ccf sales for the upcoming twelve-month period to determine the DBA for each rate class. DSM balance adjustment amounts will be assigned for recovery purposes to the rate classes for which over- or under-recoveries of DSM amounts were realized.	T Deleted: m
<u>DCCR = DSM CAPITAL COST RECOVERY</u> <u>The DCCR component is the means by which the Company recovers its capital investments made for DSM programs, as well as an approved rate of return on such capital investments. The Company calculates the DCCR component as follows:</u>	T Deleted: to
$DCCR = [(RB) (ROR + (ROR - DR) (TR / (1 - TR)))] + OE$	T
<ul style="list-style-type: none"> a) <u>RB is the total rate base for DCCR projects.</u> b) <u>ROR is the overall rate of return on DSM Rate Base (RB).</u> c) <u>DR is the composite debt rate (i.e., the cost of short- and long-term debt) embedded in ROR.</u> d) <u>TR is the composite federal and state income tax rate that applies to the equity return component of ROR.</u> e) <u>OE is the sum of the capital-related operating expenses (i.e., depreciation and amortization expense, property taxes, and insurance expense) of the DSM projects to which DCCR applies.</u> 	
<u>The Company then allocates the DCCR component to the rate class(es) benefitting from the Company's various DSM-related capital investment(s).</u>	

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Date of Issue: April 14, 2011

Date Effective: May 14, 2011

Issued By: Lonnie E. Bellar, Vice President, State Regulation and Rates, Louisville, Kentucky

Louisville Gas and Electric Company

P.S.C. Gas No. 8, Third Revision of Original Sheet No. 86.3
Canceling P.S.C. Gas No. 8, Second Revision of Original Sheet No. 86.3

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Adjustment Clause **DSM**
Demand-Side Management Cost Recovery Mechanism

CHANGES TO DSMRC

The filing of modifications to the DSMRC that require changes in the DCR component shall be made at least two (2) months prior to the beginning of the effective period for billing. Modifications to other components of the DSMRC shall be made at least thirty (30) days prior to the effective period for billing. Each filing shall include the following information as applicable:

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(1) A detailed description of each DSM program developed by the collaborative process, the total cost of each program over the twelve-month period, an analysis of expected resource savings, information concerning the specific DSM or efficiency measures to be installed, and any applicable studies that have been performed, as available.

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(2) A statement setting forth the detailed calculation of the DCR, DRLS, DSML, DBA and DSMRC.

Each change in the DSMRC shall be placed into effect with bills rendered on and after the effective date of such change.

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Date of Issue: April 14, 2011

Date Effective: May 14, 2011

Issued By: Lonnie E. Bellar, Vice President, State Regulation and Rates, Louisville, Kentucky

Louisville Gas and Electric Company

Original Sheet No. 86.4

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Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
Monthly Adjustment Factors:	
<u>Residential Rate RGS and Volunteer Fire Department Rate VFD</u>	
	<u>Energy Charge</u>
DSM Cost Recovery Component (DCR)	\$ 0.01238 per Ccf
DSM Revenues from Lost Sales (DRLS)	\$ 0.00172 per Ccf
DSM Incentive (DSMI)	\$ 0.00057 per Ccf
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00552 per Ccf
DSM Balance Adjustment (DBA)	\$ 0.00379 per Ccf
Total DSMRC for Rates RGS and VFD	\$ 0.02398 per Ccf
<u>Commercial Customers Served Under Firm Commercial Gas Service Rate CGS, As Available Gas Service Rate AAGS, Firm Transportation Rate FT, and Gas Transportation Service/Standby Rider TS</u>	
	<u>Energy Charge</u>
DSM Cost Recovery Component (DCR)	\$ 0.00080 per Ccf
DSM Revenues from Lost Sales (DRLS)	\$ 0.00000 per Ccf
DSM Incentive (DSMI)	\$ 0.00000 per Ccf
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00052 per Ccf
DSM Balance Adjustment (DBA)	\$ (0.00020) per Ccf
Total DSMRC for Rates CGS, AAGS, FT, and TS	\$ 0.00112 per Ccf

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Date of Issue: April 14, 2011
 Date Effective: May 14, 2011
 Issued By: Lonnie E. Bellar, Vice President, State Regulation and Rates, Louisville, Kentucky

EXHIBIT LEB-1
KU ELECTRIC
CLEAN VERSION

Kentucky Utilities Company

P.S.C. No. 15, First Revision of Original Sheet No. 86
Canceling P.S.C. No. 15, Original Sheet No. 86

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
APPLICABLE	
In all territory served.	
AVAILABILITY OF SERVICE	
This schedule is mandatory to Residential Rate RS, Volunteer Fire Department Service Rate VFD, General Service Rate GS, All Electric School Rate AES, Power Rate PS, Time-of-Day Secondary Service Rate TODS, Time-of-Day Primary Service Rate TODP, and Low Emission Vehicle Service Rider LEV. Industrial customers who elect not to participate in a demand-side management program hereunder shall not be assessed a charge pursuant to this mechanism. For purposes of rate application hereunder, non-residential customers will be considered "industrial" if they are primarily engaged in a process or processes that create or change raw or unfinished materials into another form or product, and/or in accordance with the North American Industry Classification System, Sections 21, 22, 31, 32, and 33. All other non-residential customers will be defined as "commercial."	
RATE	
The monthly amount computed under each of the rate schedules to which this Demand-Side Management Cost Recovery Mechanism is applicable shall be increased or decreased by the DSM Cost Recovery Component (DSMRC) at a rate per kilowatt hour of monthly consumption in accordance with the following formula:	
DSMRC = DCR + DRLS + DSMI + DBA + DCCR	
Where:	
DCR = DSM COST RECOVERY	
The DCR shall include all expected costs that have been approved by the Commission for each twelve-month period for demand-side management programs that have been developed through a collaborative advisory process ("approved programs"). Such program costs shall include the cost of planning, developing, implementing, monitoring, and evaluating DSM programs. Program costs will be assigned for recovery purposes to the rate classes whose customers are directly participating in the program. In addition, all costs incurred by or on behalf of the collaborative process, including but not limited to costs for consultants, employees, and administrative expenses, will be recovered through the DCR. Administrative costs that are allocable to more than one rate class will be recovered from those classes and allocated by rate class on the basis of the estimated budget from each program. The cost of approved programs shall be divided by the expected kilowatt-hour sales for the upcoming twelve-month period to determine the DCR for each such rate class.	
DRLS = DSM REVENUE FROM LOST SALES	
Revenues from lost sales due to DSM programs implemented on and after the effective date of this tariff will be recovered as follows:	
1) For each upcoming twelve-month period, the estimated reduction in customer usage (in kWh) as determined for the approved programs shall be multiplied by the non-variable revenue requirement per kWh for purposes of determining the lost revenue to be recovered hereunder from each customer class. The non-variable revenue requirement for the Residential, Volunteer Fire Department, General Service, All Electric School, and Low Emission Vehicle customer classes is defined as the weighted average price per kWh of expected billings under the energy charges contained in the	

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Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
RATE (continued)	
<p>RS, VFD, GS, AES, and LEV rate schedules in the upcoming twelve-month period after deducting the variable costs included in such energy charges. The non-variable revenue requirement for each of the customer classes that are billed under demand and energy rates (rate schedules PS, TODS, and TODP) is defined as the weighted average price per kWh represented by the composite of the expected billings under the respective demand and energy charges in the upcoming twelve-month period, after deducting the variable costs included in the energy charges.</p>	
<p>2) The lost revenues for each customer class shall then be divided by the estimated class sales (in kWh) for the upcoming twelve-month period to determine the applicable DRLS surcharge. Recovery of revenue from lost sales calculated for a twelve-month period shall be included in the DRLS for 36 months or until implementation of new rates pursuant to a general rate case, whichever comes first. Revenues from lost sales will be assigned for recovery purposes to the rate classes whose programs resulted in the lost sales.</p>	
<p>Revenues collected hereunder are based on engineering estimates of energy savings, expected program participation, and estimated sales for the upcoming twelve-month period. At the end of each such period, any difference between the lost revenues actually collected hereunder and the lost revenues determined after any revisions of the engineering estimates and actual program participation are accounted for shall be reconciled in future billings under the DSM Balance Adjustment (DBA) component.</p>	
<p>A program evaluation vendor will be selected to provide evaluation criteria against which energy savings will be estimated for that program. Each program will be evaluated after implementation and any revision of the original engineering estimates will be reflected in both (a) the retroactive true-up provided for under the DSM Balance Adjustment and (b) the prospective future lost revenues collected hereunder.</p>	
DSMI = DSM INCENTIVE	
<p>For all Energy Impact Programs except Direct Load Control, the DSM incentive amount shall be computed by multiplying the net resource savings expected from the approved programs that are to be installed during the upcoming twelve-month period times fifteen (15) percent, not to exceed five (5) percent of program expenditures. Net resource savings are defined as program benefits less utility program costs and participant costs where program benefits will be calculated on the basis of the present value of Company's avoided costs over the expected life of the program, and will include both capacity and energy savings. For the Energy Education Program, the DSM incentive amount shall be computed by multiplying the annual cost of the approved program times five (5) percent.</p>	
<p>The DSM incentive amount related to programs for Residential Rate RS, Volunteer Fire Department Rate VFD, General Service Rate GS, All Electric School Rate AES, Power Rate PS, Time-of-day Secondary Service Rate TODS, Time-of-Day Primary Rate TODP, and Low Emission Vehicle Service Rider LEV shall be divided by the expected kilowatt-hour sales for the upcoming twelve-month period to determine the DSMI for such rate class. DSM incentive amounts will be assigned for recovery purposes to the rate classes whose programs created the incentive.</p>	

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Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
DBA = DSM BALANCE ADJUSTMENT	
<p>The DBA shall be calculated on a calendar-year basis and is used to reconcile the difference between the amount of revenues actually billed through the DCR, DRLS, DSMI, DCCR, and previous application of the DBA and the revenues that should have been billed, as follows:</p> <ol style="list-style-type: none"> 1) For the DCR, the balance adjustment amount will be the difference between the amount billed in a twelve-month period from the application of the DCR unit charge and the actual cost of the approved programs during the same twelve-month period. 2) For the DRLS the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DRLS unit charge and the amount of lost revenues determined for the actual DSM measures implemented during the twelve-month period. 3) For the DSMI, the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DSMI unit charge and the incentive amount determined for the actual DSM measures implemented during the twelve-month period. 4) For the DBA, the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DBA and the balance adjustment amount established for the same twelve-month period. <p>The balance adjustment amounts determined on the basis of the above paragraphs (1)-(4) shall include interest applied to the monthly amounts, such interest to be calculated at a rate equal to the average of the "Three-Month Commercial Paper Rate" for the immediately preceding twelve-month period. The total of the balance adjustment amounts shall be divided by the expected kilowatt-hour sales for the upcoming twelve-month period to determine the DBA for such rate class. DSM balance adjustment amounts will be assigned for recovery purposes to the rate classes for which over- or under-recoveries of DSM amounts were realized.</p>	
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DCCR = DSM CAPITAL COST RECOVERY	
<p>The DCCR component is the means by which the Company recovers its capital investments made for DSM programs, as well as an approved rate of return on such capital investments. The Company calculates the DCCR component as follows:</p> $DCCR = [(RB) (ROR + (ROR - DR) (TR / (1 - TR)))] + OE$ <ol style="list-style-type: none"> a) RB is the total rate base for DCCR projects. b) ROR is the overall rate of return on DSM Rate Base (RB). c) DR is the composite debt rate (i.e., the cost of short- and long-term debt) embedded in ROR. d) TR is the composite federal and state income tax rate that applies to the equity return component of ROR. e) OE is the sum of the capital-related operating expenses (i.e., depreciation and amortization expense, property taxes, and insurance expense) of the DSM projects to which DCCR applies. 	
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Kentucky Utilities Company

P.S.C. No. 15, Third Revision of Original Sheet No. 86.3
Canceling P.S.C. No. 15, Second Revision of Original Sheet No. 86.3

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
<p>The Company then allocates the DCCR component to the rate class(es) benefitting from the Company's various DSM-related capital investment(s).</p>	
CHANGES TO DSMRC	
<p>Modifications to other components of the DSMRC shall be made at least thirty days prior to the effective period for billing. Each filing shall include the following information as applicable:</p>	
<ol style="list-style-type: none">1) A detailed description of each DSM program developed by the collaborative process, the total cost of each program over the twelve-month period, an analysis of expected resource savings, information concerning the specific DSM or efficiency measures to be installed, and any applicable studies that have been performed, as available.2) A statement setting forth the detailed calculation of the DCR, DRLS, DSMI, DBA, DCCR, and DSMRC.	
<p>Each change in the DSMRC shall be placed into effect with bills rendered on and after the effective date of such change.</p>	

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Kentucky Utilities Company

P.S.C. No. 15, Original Sheet No. 86.4

Adjustment Clause	DSM	
Demand-Side Management Cost Recovery Mechanism		
Monthly Adjustment Factors		
<u>Residential Service Rate RS, Volunteer Fire Department Service Rate VFD, and Low Emission Vehicle Service Rate LEV</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00144 per kWh	R
DSM Revenues from Lost Sales (DRLS)	\$ 0.00088 per kWh	I
DSM Incentive (DSMI)	\$ 0.00006 per kWh	R
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00048 per kWh	T/N
DSM Balance Adjustment (DBA)	\$(0.00045) per kWh	
Total DSMRC for Rates RS, VFD and LEV	\$ 0.00241 per kWh	I
<u>General Service Rate GS</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00077 per kWh	R
DSM Revenues from Lost Sales (DRLS)	\$ 0.00083 per kWh	R
DSM Incentive (DSMI)	\$ 0.00004 per kWh	
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00007 per kWh	T/N
DSM Balance Adjustment (DBA)	\$ 0.00006 per kWh	
Total DSMRC for Rates GS	\$ 0.00177 per kWh	I
<u>All Electric School Rate AES</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00024 per kWh	
DSM Revenues from Lost Sales (DRLS)	\$ 0.00014 per kWh	
DSM Incentive (DSMI)	\$ 0.00001 per kWh	
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00000 per kWh	T/N
DSM Balance Adjustment (DBA)	\$(0.00014) per kWh	
Total DSMRC for Rate AES	\$ 0.00025 per kWh	
<u>Commercial Customers Served Under Power Service Rate PS, Time of Day Secondary Service Rate TODS, and Time-of-Day Primary Service Rate TODP</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00021 per kWh	R
DSM Revenues from Lost Sales (DRLS)	\$ 0.00023 per kWh	R
DSM Incentive (DSMI)	\$ 0.00001 per kWh	
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00000 per kWh	T/N
DSM Balance Adjustment (DBA)	\$(0.00029) per kWh	
Total DSMRC for Rates PS, TODS and TODP	\$ 0.00016 per kWh	R
<u>Industrial Customers Served Under Time-of-Day Secondary Service Rate TODS, Time-of-Day Primary Service Rate TODP, and Retail Transmission Rate RTS</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00000 per kWh	
DSM Revenues from Lost Sales (DRLS)	\$ 0.00000 per kWh	
DSM Incentive (DSMI)	\$ 0.00000 per kWh	
DSM Capital Cost Recovery Component (DCCR)	\$ 0.00000 per kWh	T/N
DSM Balance Adjustment (DBA)	\$ 0.00000 per kWh	
Total DSMRC for Rates TODS, TODP, and RTS	\$ 0.00000 per kWh	

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KENTUCKY UTILITIES COMPANY

**Supporting Calculations for the
DSM Cost Recovery Mechanism**

ELECTRIC SERVICE

For Period Ending December 31, 2011

Kentucky Utilities - Electric Service
 DSMRC Summary

Summary of Total DSM Recovery Component (DSMRC)
 For Period Ending December 31, 2011

Rate Schedule		Cost Recovery Component (DCR)	Lost Sales Component (DRLS)	Incentive Component (DSMI)	Capital Component (DCCR)	Balance Adj Component (DBA)	DSM Recovery Component (DSMRC)	
Residential Service, Volunteer Fire Department Service, & Low Emission Vehicle Service	RS, VFD, & LEV	0.144	0.088	0.006	0.048	(0.045)	0.241	¢/kWh
General Service	GS	0.077	0.083	0.004	0.007	0.006	0.177	¢/kWh
All Electric Schools*	AES	0.024	0.014	0.001	0.000	(0.014)	0.025	¢/kWh
Power Service, Time-of-Day Service - Primary & Secondary	PS, TODP, & TODS	0.021	0.023	0.001	0.000	(0.029)	0.016	¢/kWh

*Note: New Rate schedule for AES DSM effective with 2010 Rate Case.

Kentucky Utilities - Electric Service
DCR Summary

**Summary of DSM Revenues from DSM Cost Recovery Component (DCR)
For Period Ending December 31, 2011**

Rate Schedule		DSM Cost Recovery Total Amount	Estimated Billing Determinants		DSM Cost Recovery Component (DCR)	
Residential Service, Volunteer Fire Department Service, & Low Emission Vehicle Service	RS, VFD, & LEV	\$ 9,121,941	6,329,913,788 kWh		0.144	¢/kWh
General Service	GS	\$ 1,507,270	1,965,268,093 kWh		0.077	¢/kWh
All Electric Schools*	AES	\$ 33,673	139,739,551 kWh		0.024	¢/kWh
Power Service, Time-of-Day Service - Primary & Secondary	PS, TODP, & TODS	\$ 780,174	3,681,693,860 kWh		0.021	¢/kWh
Total DCR Amount		\$ 11,443,058				

Program costs, which are categorized by residential and commercial must be allocated to the individual rate schedules. The first step, allocation between gas and electric, and between LGE and KU, is shown on "DSM Budget Allocation" page. There are currently no programs or rates applied to the industrial class of customer

Next, the DSM Program costs are further assigned to the rate schedules, which is the second and final step of the cost allocation process and is shown on the "Calculation of DCR Component from Forecast Sales" page. The total amount to be collected for each rate class is divided by the forecasted sales for that rate class to calculate the component rate in terms of ¢ / kWh.

Kentucky Utilities - Electric Service
DCR Summary

DSM Budget Allocation

Program	Allocation	2011
Total of All Programs		
LGE: RS et al	30.3%	6,964,031
LGE: RGS et al	10.8%	2,473,925
LGE: GS et al	5.5%	1,272,575
LGE: PS	2.6%	587,876
LGE: CTOD et al	0.8%	181,880
LGE: CGS et al	0.4%	87,771
KU: RS et al	39.6%	9,121,941
KU: GS	6.6%	1,507,270
KU: AES	0.1%	33,673
KU: PS et al	3.4%	780,174
Total	100.0%	23,011,116

Program	Allocation	2011
Residential Audit		
LGE: RS et al	29.4%	428,887
LGE: RGS et al	20.6%	301,526
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	730,413
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	1,460,826

Program	Allocation	2011
Residential WeCare		
LGE: RS et al	19.3%	457,069
LGE: RGS et al	30.7%	727,163
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	1,184,232
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	2,368,463

Program	Allocation	2011
Residential Lighting		
LGE: RS et al	50.0%	2,305,030
LGE: RGS et al	0.0%	0
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	2,305,030
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	4,610,059

Program	Allocation	2011
Residential HVAC		
LGE: RS et al	50.0%	266,683
LGE: RGS et al	0.0%	0
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	266,683
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	533,365

Program	Allocation	2011
Development & Administration		
LGE: RS et al	24.4%	307,524
LGE: RGS et al	20.6%	259,931
LGE: GS et al	3.0%	38,160
LGE: PS	0.2%	2,460
LGE: CTOD et al	0.0%	93
LGE: CGS et al	1.8%	22,060
KU: RS et al	41.2%	519,445
KU: GS	8.1%	102,067
KU: AES	0.1%	669
KU: PS et al	0.6%	8,047
Total	100.0%	1,260,457

Program	Allocation	2011
Residential Construction		
LGE: RS et al	34.9%	482,328
LGE: RGS et al	15.1%	209,567
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	50.0%	691,895
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	1,383,790

Program	Allocation	2011
Residential Demand		
LGE: RS et al	0.0%	0
LGE: RGS et al	0.0%	0
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	0.0%	0

Program	Allocation	2011
Responsive Smart Meters		
LGE: RS et al	95.0%	118,750
LGE: RGS et al	5.0%	6,250
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	100.0%	125,000

Program	Allocation	2011
Dealer Referral Network		
LGE: RS et al	24.4%	52,064
LGE: RGS et al	20.6%	44,006
LGE: GS et al	3.0%	6,461
LGE: PS	0.2%	417
LGE: CTOD et al	0.0%	16
LGE: CGS et al	1.8%	3,735
KU: RS et al	41.2%	87,942
KU: GS	8.1%	17,280
KU: AES	0.1%	113
KU: PS et al	0.6%	1,362
Total	100.0%	213,396

Program	Allocation	2011
Commercial Audit		
LGE: RS et al	0.0%	0
LGE: RGS et al	0.0%	0
LGE: GS et al	27.2%	883,947
LGE: PS	17.3%	562,818
LGE: CTOD et al	5.6%	180,936
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	26.7%	868,410
KU: AES	0.9%	29,483
KU: PS et al	22.4%	729,808
Total	100.0%	3,255,400

Program	Allocation	2011
Commercial HVAC		
LGE: RS et al	0.0%	0
LGE: RGS et al	0.0%	0
LGE: GS et al	46.9%	236,801
LGE: PS	3.0%	15,268
LGE: CTOD et al	0.1%	576
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	46.1%	232,767
KU: AES	0.3%	1,527
KU: PS et al	3.6%	18,351
Total	100.0%	505,290

Program	Allocation	2011
Commercial Demand		
LGE: RS et al	0.0%	0
LGE: RGS et al	0.0%	0
LGE: GS et al	0.0%	0
LGE: PS	0.0%	0
LGE: CTOD et al	0.0%	0
LGE: CGS et al	0.0%	0
KU: RS et al	0.0%	0
KU: GS	0.0%	0
KU: AES	0.0%	0
KU: PS et al	0.0%	0
Total	0.0%	0

Program	Allocation	2011
Education & Information		
LGE: RS et al	24.4%	863,956
LGE: RGS et al	20.6%	730,247
LGE: GS et al	3.0%	107,207
LGE: PS	0.2%	6,912
LGE: CTOD et al	0.0%	261
LGE: CGS et al	1.8%	61,976
KU: RS et al	41.2%	1,459,325
KU: GS	8.1%	286,746
KU: AES	0.1%	1,881
KU: PS et al	0.6%	22,606
Total	100.0%	3,541,117

Kentucky Utilities - Electric Service
DCR Summary

Calculation of DCR Component from Forecast Sales
For Period Ending December 31, 2011

Forecast Sales kWh	Residential Service RS et al	General Service GS	All Electric Schools AES	Power Service (excl. Industrial) PS et al
January 2011	811,771,076	204,832,321	12,393,162	312,339,571
February 2011	676,374,269	180,254,638	11,448,708	295,689,766
March 2011	568,351,272	168,692,732	11,431,691	310,658,877
April 2011	411,901,730	154,256,312	11,120,728	305,479,245
May 2011	358,361,528	138,439,534	11,300,374	305,359,587
June 2011	467,719,398	159,146,752	11,900,849	318,001,104
July 2011	573,984,184	174,828,605	12,524,186	324,601,119
August 2011	564,070,464	183,412,886	13,488,715	338,571,455
September 2011	440,901,870	153,483,310	12,379,653	299,649,480
October 2011	359,577,590	143,627,913	11,093,880	307,464,182
November 2011	450,825,380	136,617,042	9,750,363	275,371,135
December 2011	646,075,027	167,676,048	10,907,242	288,508,339
Total	6,329,913,788	1,965,268,093	139,739,551	3,681,693,860
Total Program Costs	\$ 9,121,941	\$ 1,507,270	\$ 33,673	\$ 780,174
DCR Factor in ¢ per kWh	0.144	0.077	0.024	0.021

Kentucky Utilities - Electric Service
DRLS Summary

**Summary of DSM Revenues from DSM Lost Sales Component (DRLS)
For Period Ending December 31, 2011**

Rate Schedule		Lost Net Revenues Total Amount	Estimated Billing Determinants		DSM Revenue from Lost Sales Component (DCR)	
Residential Service, Volunteer Fire Department Service, & Low Emission Vehicle Service	RS, VFD, & LEV	\$ 5,541,570	6,329,913,788 kWh		0.088	¢/kWh
General Service	GS	\$ 1,637,805	1,965,268,093 kWh		0.083	¢/kWh
All Electric Schools*	AES	\$ 19,303	139,739,551 kWh		0.014	¢/kWh
Power Service, Time-of-Day Service - Primary & Secondary	PS, TODP, & TODS	\$ 848,484	3,681,693,860 kWh		0.023	¢/kWh
Total DRLS Amount		\$ 8,047,162				

Lost sales from each of the programs are stated in the original filings for the programs. These lost sales are then attributed to rate class by a similar method to that carried out with the direct cost component; that is rate classes which achieve greater energy savings are allocated greater lost sales.

Kentucky Utilities - Electric Service
DRLS Summary

Calculation of DCR Component from Forecast Sales
For Period Ending December 31, 2011

Forecast Sales kWh	Residential Service RS et al	General Service GS	All Electric Schools AES	Power Service (excl. Industrial) PS et al
January 2011	811,771,076	204,832,321	12,393,162	312,339,571
February 2011	676,374,269	180,254,638	11,448,708	295,689,766
March 2011	568,351,272	168,692,732	11,431,691	310,658,877
April 2011	411,901,730	154,256,312	11,120,728	305,479,245
May 2011	358,361,528	138,439,534	11,300,374	305,359,587
June 2011	467,719,398	159,146,752	11,900,849	318,001,104
July 2011	573,984,184	174,828,605	12,524,186	324,601,119
August 2011	564,070,464	183,412,886	13,488,715	338,571,455
September 2011	440,901,870	153,483,310	12,379,653	299,649,480
October 2011	359,577,590	143,627,913	11,093,880	307,464,182
November 2011	450,825,380	136,617,042	9,750,363	275,371,135
December 2011	646,075,027	167,676,048	10,907,242	288,508,339
Total	6,329,913,788	1,965,268,093	139,739,551	3,681,693,860
Total Energy Savings	114,970,335	28,044,606	564,406	20,950,226
Non-variable Revenue per kWh	0.0482	0.0584	0.0342	0.0405
Lost Net Revenue	\$ 5,541,570	\$ 1,637,805	\$ 19,303	\$ 848,484
DRLS Factor in ¢ per kWh	0.088	0.083	0.014	0.023

Kentucky Utilities - Electric Service
 DSMI Summary

**Summary of DSM Revenues from DSM Incentive Component (DSMI)
 For Period Ending December 31, 2011**

Rate Schedule		DSM Incentive Total Amount	Estimated Billing Determinants		DSM Incentive Component (DSMI)	
Residential Service, Volunteer Fire Department Service, & Low Emission Vehicle Service	RS, VFD, & LEV	\$ 409,332	6,329,913,788 kWh		0.006	¢/kWh
General Service	GS	\$ 70,260	1,965,268,093 kWh		0.004	¢/kWh
All Electric Schools*	AES	\$ 1,650	139,739,551 kWh		0.001	¢/kWh
Power Service, Time-of-Day Service - Primary & Secondary	PS, TODP, & TODS	\$ 38,606	3,681,693,860 kWh		0.001	¢/kWh
Total DSMI Amount		\$ 519,848				

Incentives for each individual program is calculated as 15% of Net Resource Benefits (as specified in the California Standardized Tests) capped at 5% of program costs. Nearly all programs hit the 5% cost cap. The incentive by programs is then allocated across the rate classes using the same method as the cost recovery component.

Kentucky Utilities - Electric Service
DSMI Summary

Calculation of DSMI Component from Forecast Sales
For Period Ending December 31, 2011

Forecast Sales kWh	Residential Service RS et al	General Service GS	All Electric Schools AES	Power Service (excl. Industrial) PS et al
January 2011	811,771,076	204,832,321	12,393,162	312,339,571
February 2011	676,374,269	180,254,638	11,448,708	295,689,766
March 2011	568,351,272	168,692,732	11,431,691	310,658,877
April 2011	411,901,730	154,256,312	11,120,728	305,479,245
May 2011	358,361,528	138,439,534	11,300,374	305,359,587
June 2011	467,719,398	159,146,752	11,900,849	318,001,104
July 2011	573,984,184	174,828,605	12,524,186	324,601,119
August 2011	564,070,464	183,412,886	13,488,715	338,571,455
September 2011	440,901,870	153,483,310	12,379,653	299,649,480
October 2011	359,577,590	143,627,913	11,093,880	307,464,182
November 2011	450,825,380	136,617,042	9,750,363	275,371,135
December 2011	646,075,027	167,676,048	10,907,242	288,508,339
Total	6,329,913,788	1,965,268,093	139,739,551	3,681,693,860
Total Program Incentive	\$ 409,332	\$ 70,260	\$ 1,650	\$ 38,606
DSMI Factor in ¢ per kWh	0.006	0.004	0.001	0.001

Kentucky Utilities - Electric Service
DCCR Summary

**Summary of DSM Revenues from DSM Capital Cost Recovery (DCCR)
For Period Ending December 31, 2011**

Rate Schedule		DSM Rate of Return Total Amount	Estimated Billing Determinants		DSM Capital Cost Recovery (DCCR)	
Residential Service, Volunteer Fire Department Service, & Low Emission Vehicle Service	RS, VFD, & LEV	\$ 3,056,096	6,329,913,788 kWh		0.048	¢/kWh
General Service	GS	\$ 147,343	1,965,268,093 kWh		0.007	¢/kWh
All Electric Schools*	AES	\$ -	139,739,551 kWh		0.000	¢/kWh
Power Service, Time-of-Day Service - Primary & Secondary	PS, TODP, & TODS	\$ 11,616	3,681,693,860 kWh		0.000	¢/kWh
Total DCCR Amount		\$ 3,215,055				

The DSM Capital Cost Recovery Component (DCCR), allows the Companies' to earn an approved rate of return on equity exclusively for the capital expenditures. The Companies' return on equity is equal to 10.50%. The inclusion of this methodology will spread the cost of this facility/asset over its useful life and spread the billing impact to the customers over its useful life.

**Calculation of Total E(m) and Jurisdictional Surcharge Billing Factor
For Period Ending December 31, 2011**

Calculation of Total E(m)

$E(m) = [(RB) (ROR+(ROR -DR)(TR/(1-TR)))] + OE$, where

RB	=	DSM Rate Base	=	\$	1,509,036
ROR	=	Rate of Return on the DSM Rate Base	=		7.26%
DR	=	Debt Rate (both short-term and long-term debt)	=		1.76%
TR	=	Composite Federal & State Income Tax Rate	=		35.71%
OE	=	Operating Expenses			

DSM Plans

RB	=	\$	1,509,036
$(ROR + (ROR - DR) (TR / (1 - TR)))$	=		10.32%
OE	=	\$	3,059,368
E(m)	=	\$	3,215,055

E(m) by Rate Class

Electric	Residential Service	RS et al	\$	3,056,096
	General Service	GS	\$	147,343
	All Electric Schools	AES	\$	-
	Power Service (excl. Industrial)	PS et al	\$	11,616
	Total		\$	3,215,055

Kentucky Utilities - Electric Service
DCCR Summary

Calculation of DCCR Component from Forecast Sales
For Period Ending December 31, 2011

Forecast Sales kWh	Residential Service RS et al	General Service GS	All Electric Schools AES	Power Service (excl. Industrial) PS et al
January 2011	811,771,076	204,832,321	12,393,162	312,339,571
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December 2011	646,075,027	167,676,048	10,907,242	288,508,339
Total	6,329,913,788	1,965,268,093	139,739,551	3,681,693,860
Total DCCR Program Component	\$ 3,056,096	\$ 147,343	\$ -	\$ 11,616
DCCR Factor in ¢ per kWh	0.048	0.007	0.000	0.000

Rate Base by Program
For Period Ending December 31, 2011

Rate Base by Program

Demand Load Conservation	Residential	\$	1,434,104
	Commercial	\$	<u>74,932</u>
	Total	\$	1,509,036

Allocation between Residential and Commercial

Residential	\$	1,434,104
Commercial	\$	<u>74,932</u>
Total	\$	1,509,036

EXHIBIT LEB-1
KU ELECTRIC
RED-LINE VERSION

Kentucky Utilities Company

P.S.C. No. 15, First Revision of Original Sheet No. 86
Canceling P.S.C. No. 15, Original Sheet No. 86

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
APPLICABLE In all territory served.	
AVAILABILITY OF SERVICE This schedule is mandatory to Residential Rate RS, Volunteer Fire Department Service Rate VFD, General Service Rate GS, All Electric School Rate AES, Power Rate PS, Time-of-Day Secondary Service Rate TODS, Time-of-Day Primary Service Rate TODP, and Low Emission Vehicle Service Rider LEV. Industrial customers who elect not to participate in a demand-side management program hereunder shall not be assessed a charge pursuant to this mechanism. For purposes of rate application hereunder, non-residential customers will be considered "industrial" if they are primarily engaged in a process or processes that create or change raw or unfinished materials into another form or product, and/or in accordance with the North American Industry Classification System, Sections 21, 22, 31, 32, and 33. All other non-residential customers will be defined as "commercial."	
RATE The monthly amount computed under each of the rate schedules to which this Demand-Side Management Cost Recovery Mechanism is applicable shall be increased or decreased by the DSM Cost Recovery Component (DSMRC) at a rate per kilowatt hour of monthly consumption in accordance with the following formula:	
DSMRC = DCR + DRLS + DSMI + DBA + DCCR	
Where:	
DCR = DSM COST RECOVERY The DCR shall include all expected costs that have been approved by the Commission for each twelve-month period for demand-side management programs that have been developed through a collaborative advisory process ("approved programs"). Such program costs shall include the cost of planning, developing, implementing, monitoring, and evaluating DSM programs. Program costs will be assigned for recovery purposes to the rate classes whose customers are directly participating in the program. In addition, all costs incurred by or on behalf of the collaborative process, including but not limited to costs for consultants, employees, and administrative expenses, will be recovered through the DCR. Administrative costs that are allocable to more than one rate class will be recovered from those classes and allocated by rate class on the basis of the estimated budget for each program. The cost of approved programs shall be divided by the expected kilowatt-hour sales for the upcoming twelve-month period to determine the DCR for <u>each</u> such rate class.	
DRLS = DSM REVENUE FROM LOST SALES Revenues from lost sales due to DSM programs implemented on and after the effective date of this tariff will be recovered as follows:	
1) For each upcoming twelve-month period, the estimated reduction in customer usage (in kWh) as determined for the approved programs shall be multiplied by the non-variable revenue requirement per kWh for purposes of determining the lost revenue to be recovered hereunder from each customer class. The non-variable revenue requirement for the Residential, Volunteer Fire Department, General Service, All Electric School, and Low Emission Vehicle customer classes is defined as the weighted average price per kWh of expected billings under the energy charges contained in the	

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Date of Issue: April 14, 2011

Date Effective: May 14, 2011

Issued By: Lonnie E. Bellar, Vice President, State Regulation and Rates, Lexington, Kentucky

Kentucky Utilities Company

P.S.C. No. 15, First Revision of Original Sheet No. 86.1
Canceling P.S.C. No. 15, Original Sheet No. 86.1

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	

RATE (continued)

RS, VFD, GS, AES, and LEV rate schedules in the upcoming twelve-month period after deducting the variable costs included in such energy charges. The non-variable revenue requirement for each of the customer classes that are billed under demand and energy rates (rate schedules PS, TODS, and TODP) is defined as the weighted average price per kWh represented by the composite of the expected billings under the respective demand and energy charges in the upcoming twelve-month period, after deducting the variable costs included in the energy charges.

- 2) The lost revenues for each customer class shall then be divided by the estimated class sales (in kWh) for the upcoming twelve-month period to determine the applicable DRLS surcharge. Recovery of revenue from lost sales calculated for a twelve-month period shall be included in the DRLS for 36 months or until implementation of new rates pursuant to a general rate case, whichever comes first. Revenues from lost sales will be assigned for recovery purposes to the rate classes whose programs resulted in the lost sales.

Revenues collected hereunder are based on engineering estimates of energy savings, expected program participation, and estimated sales for the upcoming twelve-month period. At the end of each such period, any difference between the lost revenues actually collected hereunder and the lost revenues determined after any revisions of the engineering estimates and actual program participation are accounted for shall be reconciled in future billings under the DSM Balance Adjustment (DBA) component.

A program evaluation vendor will be selected to provide evaluation criteria against which energy savings will be estimated for that program. Each program will be evaluated after implementation and any revision of the original engineering estimates will be reflected in both (a) the retroactive true-up provided for under the DSM Balance Adjustment and (b) the prospective future lost revenues collected hereunder.

DSMI = DSM INCENTIVE

For all Energy Impact Programs except Direct Load Control, the DSM incentive amount shall be computed by multiplying the net resource savings expected from the approved programs ~~that are to be installed during the upcoming twelve-month period times fifteen~~ (15) percent, not to exceed five (5) percent of program expenditures. Net resource savings are defined as program benefits less utility program costs and participant costs where program benefits will be calculated on the basis of the present value of Company's avoided costs over the expected life of the program, and will include both capacity and energy savings. For ~~the Energy Education Program, the DSM incentive amount shall be computed by multiplying the annual cost of the approved program times five~~ (5) percent.

The DSM incentive amount related to programs for Residential Rate RS, Volunteer Fire Department Rate VFD, General Service Rate GS, All Electric School Rate AES, Power Rate PS, Time-of-day Secondary Service Rate TODS, Time-of-Day Primary Rate TODP, and Low Emission Vehicle Service Rider LEV shall be divided by the expected kilowatt-hour sales for the upcoming twelve-month period to determine the DSMI for such rate class. DSM incentive amounts will be assigned for recovery purposes to the rate classes whose programs created the incentive.

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Kentucky Utilities Company

P.S.C. No. 15, First Revision of Original Sheet No. 86.2
Canceling P.S.C. No. 15, Original Sheet No. 86.2

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
DBA = DSM BALANCE ADJUSTMENT	
<p>The DBA shall be calculated on a <u>calendar-year basis and is used to reconcile the difference between the amount of revenues actually billed through the DCR, DRLS, DSMI, DCCR, and previous application of the DBA and the revenues that should have been billed, as follows:</u></p> <ol style="list-style-type: none"> 1) For the DCR, the balance adjustment amount will be the difference between the amount billed in a twelve-month period from the application of the DCR unit charge and the actual cost of the approved programs during the same twelve-month period. 2) For the DRLS the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DRLS unit charge and the amount of lost revenues determined for the actual DSM measures implemented during the twelve-month period. 3) For the DSMI, the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DSMI unit charge and the incentive amount determined for the actual DSM measures implemented during the twelve-month period. 4) For the DBA, the balance adjustment amount will be the difference between the amount billed during the twelve-month period from application of the DBA and the balance adjustment amount established for the same twelve-month period. <p>The balance adjustment amounts determined on the basis of the above paragraphs (1)-(4) shall include interest applied to the monthly amounts, such interest to be calculated at a rate equal to the average of the "Three-Month Commercial Paper Rate" for the immediately preceding twelve-month period. The total of the balance adjustment amounts shall be divided by the expected kilowatt-hour sales for the upcoming twelve-month period to determine the DBA for such rate class. DSM balance adjustment amounts will be assigned for recovery purposes to the rate classes <u>for which over- or under-recoveries of DSM amounts were realized.</u></p>	
DCCR = DSM CAPITAL COST RECOVERY	
<p>The DCCR component is the means by which the Company recovers its capital investments made for DSM programs, as well as an approved rate of return on such capital investments. The Company calculates the DCCR component as follows:</p> $DCCR = [(RB) (ROR + (ROR - DR) (TR / (1 - TR))] + OE$ <ol style="list-style-type: none"> a) RB is the total rate base for DCCR projects. b) ROR is the overall rate of return on DSM Rate Base (RB). c) DR is the composite debt rate (i.e., the cost of short- and long-term debt) embedded in ROR. d) TR is the composite federal and state income tax rate that applies to the equity return component of ROR. e) OE is the sum of the capital-related operating expenses (i.e., depreciation and amortization expense, property taxes, and insurance expense) of the DSM projects to which DCCR applies. 	

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Kentucky Utilities Company

P.S.C. No. 15, Third Revision of Original Sheet No. 86.3
 Canceling P.S.C. No. 15, Second Revision of Original Sheet No. 86.3

Adjustment Clause	DSM
Demand-Side Management Cost Recovery Mechanism	
<p><u>The Company then allocates the DCCR component to the rate class(es) benefitting from the Company's various DSM-related capital investment(s).</u></p>	
<p><u>CHANGES TO DSMRC</u></p> <p>Modifications to other components of the DSMRC shall be made at least thirty days prior to the effective period for billing. Each filing shall include the following information as applicable:</p> <ol style="list-style-type: none"> 1) A detailed description of each DSM program developed by the collaborative process, the total cost of each program over the twelve-month period, an analysis of expected resource savings, information concerning the specific DSM or efficiency measures to be installed, and any applicable studies <u>that have been performed, as available.</u> 2) A statement setting forth the detailed calculation of the DCR, DRLS, DSMI, DBA, <u>DCCR, and DSMRC.</u> <p>Each change in the DSMRC shall be placed into effect with bills rendered on and after the effective date of such change.</p>	

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Residential Service Rate RS, Volunteer	
Fire Department Service Rate VFD, and	
Low Emission Vehicle Service LEV - Energy Charge	T
DSM Cost Recovery Component (DCR) . \$ 0.00184 . per kWh	T
DSM Revenues from Lost Sales (DRLS) . \$ 0.00070 . per kWh	T
DSM Incentive (DSMI) . \$ 0.00008 . per kWh	
DSM Balance Adjustment (DBA) . \$(0.00019) . per kWh	
Total DSMRC for Rates RS, VFD and LEV . \$ 0.00243 . per kWh	
General Service Rate GS Energy Charge	
DSM Cost Recovery Component (DCR) . \$ 0.00079 . per kWh	T
DSM Revenues from Lost Sales (DRLS) . \$ 0.00086 . per kWh	T
DSM Incentive (DSMI) . \$ 0.00004 . per kWh	
DSM Balance Adjustment (DBA) . \$(0.00033) . per kWh	
Total DSMRC for Rates GS . \$ 0.00136 . per kWh	
All Electric School Rate AES Energy Charge	
DSM Cost Recovery Component (DCR) . \$ 0.00024 . per kWh	
DSM Revenues from Lost Sales (DRLS) . \$ 0.00014 . per kWh	
DSM Incentive (DSMI) . \$ 0.00001 . per kWh	
DSM Balance Adjustment (DBA) . \$ 0.00000 . per kWh	
Total DSMRC for Rate AES . \$ 0.00039 . per kWh	
Commercial Customers Served Under	
Power Service Rate PS, Time of Day	
Secondary Service Rate TODS and	
Time-of-Day Primary Service Rate TODP - Energy Charge	
DSM Cost Recovery Component (DCR) . \$ 0.00028 . per kWh	
DSM Revenues from Lost Sales (DRLS) . \$ 0.00024 . per kWh	
DSM Incentive (DSMI) . \$ 0.00001 . per kWh	

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Date Effective: May 14, 2011

Issued By: Lonnie E. Bellar, Vice President, State Regulation and Rates, Lexington, Kentucky

Kentucky Utilities Company

P.S.C. No. 15, Original Sheet No. 86.4

Adjustment Clause	DSM	
Demand-Side Management Cost Recovery Mechanism		
Monthly Adjustment Factors		
<u>Residential Service Rate RS, Volunteer Fire Department Service Rate VFD, and Low Emission Vehicle Service Rate LEV</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00144 per kWh	R Deleted: 00184
DSM Revenues from Lost Sales (DRLS)	\$ 0.00088 per kWh	I Deleted: 00070
DSM Incentive (DSMI)	\$ 0.00006 per kWh	R Deleted: 00008
<u>DSM Capital Cost Recovery Component (DCCR)</u>	<u>\$ 0.00048 per kWh</u>	T/N
DSM Balance Adjustment (DBA)	\$(0.00045) per kWh	
Total DSMRC for Rates RS, VFD and LEV	\$ 0.00241 per kWh	I Deleted: 00217
<u>General Service Rate GS</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00077 per kWh	R Deleted: 00079
DSM Revenues from Lost Sales (DRLS)	\$ 0.00083 per kWh	R Deleted: 00086
DSM Incentive (DSMI)	\$ 0.00004 per kWh	
<u>DSM Capital Cost Recovery Component (DCCR)</u>	<u>\$ 0.00007 per kWh</u>	T/N
DSM Balance Adjustment (DBA)	\$ 0.00006 per kWh	
Total DSMRC for Rates GS	\$ 0.00177 per kWh	I Deleted: 00175
<u>All Electric School Rate AES</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00024 per kWh	
DSM Revenues from Lost Sales (DRLS)	\$ 0.00014 per kWh	
DSM Incentive (DSMI)	\$ 0.00001 per kWh	
<u>DSM Capital Cost Recovery Component (DCCR)</u>	<u>\$ 0.00000 per kWh</u>	T/N
DSM Balance Adjustment (DBA)	\$(0.00014) per kWh	
Total DSMRC for Rate AES	\$ 0.00025 per kWh	
<u>Commercial Customers Served Under Power Service Rate PS, Time of Day Secondary Service Rate TODS, and Time-of-Day Primary Service Rate TODP</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00021 per kWh	R Deleted: 00028
DSM Revenues from Lost Sales (DRLS)	\$ 0.00023 per kWh	R Deleted: 00024
DSM Incentive (DSMI)	\$ 0.00001 per kWh	
<u>DSM Capital Cost Recovery Component (DCCR)</u>	<u>\$ 0.00000 per kWh</u>	T/N
DSM Balance Adjustment (DBA)	\$(0.00029) per kWh	
Total DSMRC for Rates PS, TODS and TODP	\$ 0.00016 per kWh	R Deleted: 00024
<u>Industrial Customers Served Under Time-of-Day Secondary Service Rate TODS, Time-of-Day Primary Service Rate TODP, and Retail Transmission Rate RTS</u>		
	<u>Energy Charge</u>	
DSM Cost Recovery Component (DCR)	\$ 0.00000 per kWh	
DSM Revenues from Lost Sales (DRLS)	\$ 0.00000 per kWh	
DSM Incentive (DSMI)	\$ 0.00000 per kWh	
<u>DSM Capital Cost Recovery Component (DCCR)</u>	<u>\$ 0.00000 per kWh</u>	T/N
DSM Balance Adjustment (DBA)	\$ 0.00000 per kWh	
Total DSMRC for Rates TODS, TODP, and RTS	\$ 0.00000 per kWh	

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Date Effective: May 14, 2011

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Monthly Adjustment FactorsResidential Service Rate RS, Volunteer
Fire Department Service Rate VFD, and
Low Emission Vehicle Service LEVCharge

	<u>Energy</u>
DSM Cost Recovery Component (DCR)	\$ 0.00184 per kWh
DSM Revenues from Lost Sales (DRLS)	\$ 0.00070 per kWh
DSM Incentive (DSMI)	\$ 0.00008 per kWh
DSM Balance Adjustment (DBA)	\$(0.00019) per kWh
Total DSMRC for Rates RS, VFD and LEV	\$ 0.00243 per kWh

General Service Rate GSCharge

	<u>Energy</u>
DSM Cost Recovery Component (DCR)	\$ 0.00079 per kWh
DSM Revenues from Lost Sales (DRLS)	\$ 0.00086 per kWh
DSM Incentive (DSMI)	\$ 0.00004 per kWh
DSM Balance Adjustment (DBA)	\$(0.00033) per kWh
Total DSMRC for Rates GS	\$ 0.00136 per kWh

All Electric School Rate AESCharge

	<u>Energy</u>
DSM Cost Recovery Component (DCR)	\$ 0.00024 per kWh
DSM Revenues from Lost Sales (DRLS)	\$ 0.00014 per kWh
DSM Incentive (DSMI)	\$ 0.00001 per kWh
DSM Balance Adjustment (DBA)	\$ 0.00000 per kWh
Total DSMRC for Rate AES	\$ 0.00039 per kWh

Commercial Customers Served Under
Power Service Rate PS, Time of Day
Secondary Service Rate TODS and
Time-of-Day Primary Service Rate TODPCharge

	<u>Energy</u>
DSM Cost Recovery Component (DCR)	\$ 0.00028 per kWh
DSM Revenues from Lost Sales (DRLS)	\$ 0.00024 per kWh
DSM Incentive (DSMI)	\$ 0.00001 per kWh
DSM Balance Adjustment (DBA)	\$(0.00032) per kWh
Total DSMRC for Rates PS, TODS and TODP	\$ 0.00021 per kWh

Industrial Customers Served Under
Time-of-Day Secondary Service Rate TODS,
Time-of-Day Primary Service Rate TODP,
and Retail Transmission Rate RTSCharge

	<u>Energy</u>
DSM Cost Recovery Component (DCR)	\$ 0.00000 per kWh
DSM Revenues from Lost Sales (DRLS)	\$ 0.00000 per kWh
DSM Incentive (DSMI)	\$ 0.00000 per kWh

Exhibit LEB-2

	10 year	30 year
	07/01/2010, 2.96	07/01/2010, 3.88
	07/02/2010, 3.00	07/02/2010, 3.94
	07/05/2010, ND	07/05/2010, ND
	07/06/2010, 2.95	07/06/2010, 3.89
	07/07/2010, 3.00	07/07/2010, 3.96
	07/08/2010, 3.04	07/08/2010, 4.00
	07/09/2010, 3.07	07/09/2010, 4.04
	07/12/2010, 3.08	07/12/2010, 4.05
	07/13/2010, 3.15	07/13/2010, 4.10
	07/14/2010, 3.07	07/14/2010, 4.03
	07/15/2010, 3.00	07/15/2010, 3.97
	07/16/2010, 2.96	07/16/2010, 3.95
	07/19/2010, 2.99	07/19/2010, 3.99
	07/20/2010, 2.98	07/20/2010, 3.99
	07/21/2010, 2.90	07/21/2010, 3.89
	07/22/2010, 2.96	07/22/2010, 3.95
	07/23/2010, 3.02	07/23/2010, 4.01
	07/26/2010, 3.03	07/26/2010, 4.03
	07/27/2010, 3.08	07/27/2010, 4.08
	07/28/2010, 3.03	07/28/2010, 4.07
	07/29/2010, 3.03	07/29/2010, 4.08
	07/30/2010, 2.94	07/30/2010, 3.98
July 2010 average	3.01	3.99
current - 4-11-11	3.59	4.64

**Capitalization Summary
DSM/EE Plan - LG&E Electric**

Project 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Residential DLC							
Revenue Requirement	987,648	1,387,315	1,257,040	1,281,724	1,142,973	1,165,375	1,188,226
Annual Cash Flow	-	-	-	-	-	-	-
Eligible (Not Depreciated)	987,648	2,374,963	3,632,003	4,913,727	6,056,700	7,222,075	8,410,301
Eligible Cumulative	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
Book Depreciation rate, per year	3.75%	7.22%	6.68%	6.18%	5.71%	5.29%	4.89%
Tax Depreciation rate, per year	118,518	284,996	435,840	589,647	726,804	866,649	1,009,236
Book Depreciation	118,518	403,513	839,354	1,429,001	2,155,805	3,022,454	4,031,690
Book Accumulated Depreciation Balance	35,71%	35,71%	35,71%	35,71%	35,71%	35,71%	35,71%
Income Tax Rate	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%
Annual Property Tax Rate	37,037	171,449	242,509	303,521	346,019	381,687	411,096
Tax Depreciation	(29,095)	(40,545)	(69,034)	(102,169)	(135,969)	(173,168)	(213,582)
Deferred Tax Balance							
Revenue Recovery on Capital Expenditure to date							
Eligible Plant, cumulative capital expenditures	987,648	2,374,963	3,632,003	4,913,727	6,056,700	7,222,075	8,410,301
Less: Retired Plant/Capital	-	-	-	-	-	-	-
Less: Accumulated Depreciation	(118,518)	(403,513)	(839,354)	(1,429,001)	(2,155,805)	(3,022,454)	(4,031,690)
Plus: Accumulated Depreciation on Retired Plant/Capital	-	-	-	-	-	-	-
Less: Deferred Tax Balance	29,095	69,640	138,674	240,843	376,812	549,980	763,562
Plus: Deferred Tax Balance on Retired Plant/Capital	-	-	-	-	-	-	-
Rate Base	\$ 898,225	\$ 2,041,089	\$ 2,931,323	\$ 3,725,569	\$ 4,277,707	\$ 4,749,601	\$ 5,142,173
Rate of return	10.70%	10.70%	10.70%	10.70%	10.70%	10.70%	10.70%
Return	\$ 96,148	\$ 218,483	\$ 313,776	\$ 398,794	\$ 457,896	\$ 508,409	\$ 550,430
Operating expenses (O&M)	1,813,750	2,498,794	2,573,018	3,195,642	3,263,083	3,382,904	3,523,581
Annual Depreciation expense	118,518	284,996	435,840	589,647	726,804	866,649	1,009,236
Less depreciation on Retired Plant/Capital	-	-	-	-	-	-	-
Annual Property Tax expense	-	-	-	-	-	-	-
Total OE	\$ 1,932,268	\$ 2,783,790	\$ 3,006,858	\$ 3,785,289	\$ 3,989,887	\$ 4,249,553	\$ 4,532,818
Total E(m)	2,028,416	3,002,273	3,322,634	4,184,083	4,447,783	4,757,962	5,083,248

Capitalization Summary DSM/EE Plan - LG&E Electric

Project 2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Commercial DLC							
Revenue Requirement							
Annual Cash Flow	51,659	60,515	61,725	62,960	49,430	50,419	51,427
Eligible (Not Depreciated)	-	-	-	-	-	-	-
Eligible Cumulative	51,659	112,174	173,899	236,859	286,289	336,708	388,136
Book Depreciation rate, per year	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
Tax Depreciation rate, per year	3.75%	7.22%	6.68%	6.18%	5.71%	5.29%	4.89%
Book Depreciation	6,199	13,461	20,868	28,423	34,355	40,405	46,576
Book Accumulated Depreciation Balance	6,199	19,660	40,528	68,951	103,306	143,711	190,287
Income Tax Rate	35.71%	35.71%	35.71%	35.71%	35.71%	35.71%	35.71%
Annual Property Tax Rate	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%
Tax Depreciation	1,937	8,098	11,611	14,631	16,356	17,795	18,972
Deferred Tax Balance	(1,522)	(1,915)	(3,305)	(4,925)	(6,427)	(8,073)	(9,857)
Revenue Recovery on Capital Expenditure to date							
Eligible Plant, cumulative capital expenditures	51,659	112,174	173,899	236,859	286,289	336,708	388,136
Less: Retired Plant/Capital	-	-	-	-	-	-	-
Less: Accumulated Depreciation	(6,199)	(19,660)	(40,528)	(68,951)	(103,306)	(143,711)	(190,287)
Plus: Accumulated Depreciation on Retired Plant/Capital	-	-	-	-	-	-	-
Less: Deferred Tax Balance	1,522	3,437	6,742	11,667	18,094	26,168	36,024
Plus: Deferred Tax Balance on Retired Plant/Capital	-	-	-	-	-	-	-
Rate Base	\$ 46,982	\$ 95,951	\$ 140,113	\$ 179,575	\$ 201,078	\$ 219,165	\$ 233,873
Rate of return	10.70%	10.70%	10.70%	10.70%	10.70%	10.70%	10.70%
Return	\$ 5,029	\$ 10,271	\$ 14,998	\$ 19,222	\$ 21,524	\$ 23,460	\$ 25,034
Operating expenses (O&M)	94,400	117,167	123,291	146,947	147,102	152,409	158,456
Annual Depreciation expense	6,199	13,461	20,868	28,423	34,355	40,405	46,576
Less depreciation on Retired Plant/Capital	-	-	-	-	-	-	-
Annual Property Tax expense	-	-	-	-	-	-	-
Total OE	\$ 100,599	\$ 130,628	\$ 144,159	\$ 175,370	\$ 181,457	\$ 192,814	\$ 205,032
Total E(m)	105,628	140,898	159,157	194,592	202,980	216,274	230,067

**Capitalization Summary
DSM/EE Plan - LG&E Electric**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Total E(m) - All LGE Electric Projects	2,134,043	3,143,171	3,481,791	4,378,675	4,650,763	4,974,235	5,313,314
Total Revenue Requirements							
Residential DLC	2,028,416	3,002,273	3,322,634	4,184,083	4,447,783	4,757,962	5,083,248
Commercial DLC	105,628	140,898	159,157	194,592	202,980	216,274	230,067
Total	2,134,043	3,143,171	3,481,791	4,378,675	4,650,763	4,974,235	5,313,314

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Project 1 Annual Cash Flow	987,648	1,387,315	1,257,040	1,281,724	1,142,973	1,165,375	1,188,226
Project 2 Annual Cash Flow	51,659	60,515	61,725	62,960	49,430	50,419	51,427
Total-LGE Electric	1,039,307	1,447,830	1,318,765	1,344,684	1,192,403	1,215,794	1,239,653

Capitalization Summary DSM/EE Plan - LG&E Gas

Project 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Residential DLC							
Revenue Requirement							
Annual Cash Flow	536,747	753,950	683,151	696,566	621,160	633,335	645,753
Eligible (Not Depreciated)	-	-	-	-	-	-	-
Eligible Cumulative	536,747	1,290,697	1,973,848	2,670,413	3,291,573	3,924,908	4,570,661
Book Depreciation rate, per year	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
Tax Depreciation rate, per year	3.75%	7.22%	6.68%	6.18%	5.71%	5.29%	4.89%
Book Depreciation	64,410	154,884	236,862	320,450	394,989	470,989	548,479
Book Accumulated Depreciation Balance	64,410	219,293	456,155	776,605	1,171,593	1,642,582	2,191,062
Income Tax Rate	35.71%	35.71%	35.71%	35.71%	35.71%	35.71%	35.71%
Annual Property Tax Rate	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%
Tax Depreciation	20,128	93,175	131,794	164,951	188,048	207,431	223,414
Deferred Tax Balance	(15,812)	(22,035)	(37,517)	(55,525)	(73,894)	(94,110)	(116,073)
Revenue Recovery on Capital Expenditure to date							
Eligible Plant, cumulative capital expenditures	536,747	1,290,697	1,973,848	2,670,413	3,291,573	3,924,908	4,570,661
Less: Retired Plant/Capital	-	-	-	-	-	-	-
Less: Accumulated Depreciation	(64,410)	(219,293)	(456,155)	(776,605)	(1,171,593)	(1,642,582)	(2,191,062)
Plus: Accumulated Depreciation on Retired Plant/Capital	-	-	-	-	-	-	-
Less: Deferred Tax Balance	15,812	37,846	75,364	130,888	204,782	298,892	414,965
Plus: Deferred Tax Balance on Retired Plant/Capital	-	-	-	-	-	-	-
Rate Base	\$ 488,149	\$ 1,109,250	\$ 1,593,056	\$ 2,024,697	\$ 2,324,762	\$ 2,581,218	\$ 2,794,564
Rate of return	10.70%	10.70%	10.70%	10.70%	10.70%	10.70%	10.70%
Return	\$ 52,253	\$ 118,737	\$ 170,525	\$ 216,728	\$ 248,848	\$ 276,300	\$ 299,137
Operating expenses (O&M)	985,700	1,357,994	1,398,332	1,736,703	1,773,354	1,838,473	1,914,925
Annual Depreciation expense	64,410	154,884	236,862	320,450	394,989	470,989	548,479
Less depreciation on Retired Plant/Capital	-	-	-	-	-	-	-
Annual Property Tax expense	-	-	-	-	-	-	-
Total OE	\$ 1,050,110	\$ 1,512,878	\$ 1,635,194	\$ 2,057,153	\$ 2,168,343	\$ 2,309,462	\$ 2,463,404
Total E(m)	1,102,362	1,631,615	1,805,718	2,273,881	2,417,191	2,585,761	2,762,541

Capitalization Summary DSM/EE Plan - LG&E Gas

Project 2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Commercial DLC							
Revenue Requirement							
Annual Cash Flow	27,991	32,790	33,445	34,114	26,784	27,319	27,866
Eligible (Not Depreciated)	-	-	-	-	-	-	-
Eligible Cumulative	27,991	60,781	94,226	128,340	155,124	182,443	210,309
Book Depreciation rate, per year	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
Tax Depreciation rate, per year	3.75%	7.22%	6.68%	6.18%	5.71%	5.29%	4.89%
Book Depreciation	3,359	7,294	11,307	15,401	18,615	21,893	25,237
Book Accumulated Depreciation Balance	3,359	10,653	21,960	37,361	55,975	77,869	103,106
Income Tax Rate	35.71%	35.71%	35.71%	35.71%	35.71%	35.71%	35.71%
Annual Property Tax Rate	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%
Tax Depreciation	1,050	4,388	6,291	7,928	8,862	9,642	10,280
Deferred Tax Balance	(825)	(1,038)	(1,791)	(2,669)	(3,482)	(4,375)	(5,341)
Revenue Recovery on Capital Expenditure to date							
Eligible Plant, cumulative capital expenditures	27,991	60,781	94,226	128,340	155,124	182,443	210,309
Less: Retired Plant/Capital	-	-	-	-	-	-	-
Less: Accumulated Depreciation	(3,359)	(10,653)	(21,960)	(37,361)	(55,975)	(77,869)	(103,106)
Plus: Accumulated Depreciation on Retired Plant/Capital	-	-	-	-	-	-	-
Less: Deferred Tax Balance	825	1,862	3,653	6,322	9,804	14,179	19,520
Plus: Deferred Tax Balance on Retired Plant/Capital	-	-	-	-	-	-	-
Rate Base	\$ 25,457	\$ 51,990	\$ 75,920	\$ 97,302	\$ 108,953	\$ 118,753	\$ 126,723
Rate of return	10.70%	10.70%	10.70%	10.70%	10.70%	10.70%	10.70%
Return	\$ 2,725	\$ 5,565	\$ 8,127	\$ 10,415	\$ 11,663	\$ 12,712	\$ 13,565
Operating expenses (O&M)	51,150	63,486	66,804	79,622	79,706	82,582	85,858
Annual Depreciation expense	3,359	7,294	11,307	15,401	18,615	21,893	25,237
Less depreciation on Retired Plant/Capital	-	-	-	-	-	-	-
Annual Property Tax expense	-	-	-	-	-	-	-
Total OE	\$ 54,509	\$ 70,780	\$ 78,112	\$ 95,023	\$ 98,321	\$ 104,475	\$ 111,096
Total E(m)	57,234	76,345	86,238	105,438	109,984	117,187	124,660

**Capitalization Summary
DSM/EE Plan - LG&E Gas**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Total E(m) - All LGE Gas Projects	1,159,596	1,707,960	1,891,956	2,379,319	2,527,175	2,702,948	2,887,201
Total Revenue Requirements							
Residential DLC	1,102,362	1,631,615	1,805,718	2,273,881	2,417,191	2,585,761	2,762,541
Commercial DLC	57,234	76,345	86,238	105,438	109,984	117,187	124,660
Total	1,159,596	1,707,960	1,891,956	2,379,319	2,527,175	2,702,948	2,887,201

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Project 1 Annual Cash Flow	536,747	753,950	683,151	696,566	621,160	633,335	645,753
Project 2 Annual Cash Flow	27,991	32,790	33,445	34,114	26,784	27,319	27,866
Total-LGE Gas	564,738	786,739	716,596	730,680	647,943	660,654	673,619

Capitalization Summary DSM/EE Plan - KU Electric

Project 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Residential DLC							
Revenue Requirement							
Annual Cash Flow	1,524,395	2,141,264	1,940,191	1,978,290	1,764,132	1,798,710	1,833,979
Eligible (Not Depreciated)	-	-	-	-	-	-	-
Eligible Cumulative	1,524,395	3,665,659	5,605,851	7,584,141	9,348,273	11,146,983	12,980,962
Book Depreciation rate, per year	7.13%	7.13%	7.13%	7.13%	7.13%	7.13%	7.13%
Tax Depreciation rate, per year	3.75%	7.22%	6.88%	6.18%	5.71%	5.29%	4.89%
Book Depreciation	108,689	261,362	399,697	540,749	666,532	794,780	925,543
Book Accumulated Depreciation Balance	108,689	370,051	769,748	1,310,497	1,977,029	2,771,809	3,697,352
Income Tax Rate	35.71%	35.71%	35.71%	35.71%	35.71%	35.71%	35.71%
Annual Property Tax Rate	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%
Tax Depreciation	57,165	264,624	374,303	468,472	534,067	589,118	634,509
Deferred Tax Balance	(18,398)	1,165	(9,068)	(25,808)	(47,300)	(73,437)	(103,921)
Revenue Recovery on Capital Expenditure to date							
Eligible Plant, cumulative capital expenditures	1,524,395	3,665,659	5,605,851	7,584,141	9,348,273	11,146,983	12,980,962
Less: Retired Plant/Capital	-	-	-	-	-	-	-
Less: Accumulated Depreciation	(108,689)	(370,051)	(769,748)	(1,310,497)	(1,977,029)	(2,771,809)	(3,697,352)
Plus: Accumulated Depreciation on Retired Plant/Capital	-	-	-	-	-	-	-
Less: Deferred Tax Balance	18,398	17,233	26,301	52,109	99,409	172,846	276,767
Plus: Deferred Tax Balance on Retired Plant/Capital	-	-	-	-	-	-	-
Rate Base	\$ 1,434,104	\$ 3,312,842	\$ 4,862,404	\$ 6,325,753	\$ 7,470,653	\$ 8,548,020	\$ 9,560,378
Rate of return	10.32%	10.32%	10.32%	10.32%	10.32%	10.32%	10.32%
Return	\$ 147,956	\$ 341,786	\$ 501,654	\$ 652,627	\$ 770,746	\$ 881,898	\$ 986,343
Operating expenses (O&M)	2,799,450	3,856,789	3,971,350	4,932,345	5,036,437	5,221,377	5,438,506
Annual Depreciation expense	108,689	261,362	399,697	540,749	666,532	794,780	925,543
Less depreciation on Retired Plant/Capital	-	-	-	-	-	-	-
Annual Property Tax expense	-	-	-	-	-	-	-
Total OE	\$ 2,908,139	\$ 4,118,150	\$ 4,371,047	\$ 5,473,094	\$ 5,702,969	\$ 6,016,157	\$ 6,364,049
Total E(m)	3,056,096	4,459,936	4,872,700	6,125,721	6,473,716	6,898,055	7,350,392

Capitalization Summary DSM/EE Plan - KU Electric

Project 2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Commercial DLC							
Revenue Requirement							
Annual Cash Flow	79,650	93,305	95,171	97,074	76,214	77,738	79,293
Eligible (Not Depreciated)	-	-	-	-	-	-	-
Eligible Cumulative	79,650	172,955	268,125	365,199	441,413	519,151	598,445
Book Depreciation rate, per year	7.13%	7.13%	7.13%	7.13%	7.13%	7.13%	7.13%
Tax Depreciation rate, per year	3.75%	7.22%	6.68%	6.18%	5.71%	5.29%	4.89%
Book Depreciation	5,679	12,332	19,117	26,039	31,473	37,015	42,669
Book Accumulated Depreciation Balance	5,679	18,011	37,128	63,167	94,639	131,655	174,324
Income Tax Rate	35.71%	35.71%	35.71%	35.71%	35.71%	35.71%	35.71%
Annual Property Tax Rate	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%
Tax Depreciation	2,987	12,486	17,903	22,558	25,218	27,437	29,252
Deferred Tax Balance	(961)	55	(434)	(1,243)	(2,233)	(3,420)	(4,791)
Revenue Recovery on Capital Expenditure to date							
Eligible Plant, cumulative capital expenditures	79,650	172,955	268,125	365,199	441,413	519,151	598,445
Less: Retired Plant/Capital	-	-	-	-	-	-	-
Less: Accumulated Depreciation	(5,679)	(18,011)	(37,128)	(63,167)	(94,639)	(131,655)	(174,324)
Plus: Accumulated Depreciation on Retired Plant/Capital	-	-	-	-	-	-	-
Less: Deferred Tax Balance	961	906	1,340	2,583	4,816	8,236	13,027
Plus: Deferred Tax Balance on Retired Plant/Capital	-	-	-	-	-	-	-
Rate Base	\$ 74,932	\$ 155,850	\$ 232,337	\$ 304,615	\$ 351,590	\$ 395,733	\$ 437,148
Rate of return	10.32%	10.32%	10.32%	10.32%	10.32%	10.32%	10.32%
Return	\$ 7,731	\$ 16,079	\$ 23,970	\$ 31,427	\$ 36,273	\$ 40,828	\$ 45,100
Operating expenses (O&M)	145,549	180,653	190,095	226,569	226,808	234,990	244,314
Annual Depreciation expense	5,679	12,332	19,117	26,039	31,473	37,015	42,669
Less depreciation on Retired Plant/Capital	-	-	-	-	-	-	-
Annual Property Tax expense	-	-	-	-	-	-	-
Total OE	\$ 151,228	\$ 192,985	\$ 209,212	\$ 252,608	\$ 258,281	\$ 272,006	\$ 286,984
Total E(m)	158,959	209,064	233,183	284,035	294,555	312,834	332,084

**Capitalization Summary
DSM/EE Plan - KU Electric**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Total E(m) - All KU Electric Projects	3,215,055	4,668,999	5,105,883	6,409,756	6,768,270	7,210,889	7,682,476
Total Revenue Requirements							
Residential DLC	3,058,096	4,459,936	4,872,700	6,125,721	6,473,716	6,898,055	7,350,392
Commercial DLC	158,959	209,064	233,183	284,035	294,555	312,834	332,084
Total	3,215,055	4,668,999	5,105,883	6,409,756	6,768,270	7,210,889	7,682,476
Project 1							
Annual Cash Flow	1,524,395	2,141,264	1,940,191	1,978,290	1,764,132	1,798,710	1,833,979
Project 2							
Annual Cash Flow	79,650	93,305	95,171	97,074	76,214	77,738	79,293
Total-KU Electric	1,604,045	2,234,569	2,035,362	2,075,364	1,840,346	1,876,448	1,913,272

1 **Q. Please state your name, position and business address.**

2 A. My name is Michael E. Hornung. I am currently employed as the Manager, Energy
3 Efficiency Planning/Development, for LG&E and KU Services Company, which
4 provides services to Louisville Gas and Electric Company (“LG&E”) and Kentucky
5 Utilities Company (“KU”) (collectively “Companies”). My business address is 220
6 West Main Street, Louisville, Kentucky. A complete statement of my education and
7 work experience is attached to this testimony as Appendix A.

8 **Q. Have you ever testified before the Commission?**

9 A. While I have not previously submitted testimony, I am familiar with the regulatory
10 process and have assisted with preparing responses to interrogatories and reports to
11 state regulatory agencies.

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

13 A. The purpose of my testimony is to describe the performance of the Companies’
14 existing demand-side management and energy efficiency (“DSM/EE”) programs and
15 the Companies’ proposed changes to those programs, as well as to describe the
16 Companies’ proposals for new DSM/EE programs to assist customers to be more
17 cognizant of their energy usage and reduce their energy bills.

18 **Q. Are you sponsoring any exhibits to your testimony?**

19 A. Yes. Attached as Exhibit MEH-1 to my testimony is the Companies’ Demand-Side
20 Management and Energy Efficiency Program Plan. The Plan states the Companies’
21 rationale for pursuing additional DSM/EE initiatives, describes the process by which
22 the Companies developed the Plan, sets out detailed descriptions of the Companies’

1 proposed DSM/EE programs, and presents the analyses supporting the proposed
2 programs.

3 **Explanation of DSM/EE Programs and the Companies' History with Them**

4 **Q. What are DSM/EE programs, and how do they benefit customers?**

5 A. Simply stated, DSM/EE programs are designed to help reduce the demand for
6 electricity and the quantity of electrical energy customers consume relative to what
7 they would consume in the absence of such programs. Such programs are of two
8 basic types: (1) demand-side management programs, which permit a utility to reduce
9 portions of participating customers' demand at certain times; and (2) energy-
10 efficiency programs, which assist customers to be more energy-efficient in their
11 homes and businesses and reduce overall energy consumption as well as overall
12 demand. The Companies have Commission-approved programs of both types in
13 place today. The Companies' application in this proceeding proposes enhancements
14 to, and the creation of new, programs of both types.

15 The benefits customers receive from DSM/EE programs are lower bills and a
16 safer, more reliable electrical system than they would have had absent the programs.
17 Reducing relative demand through DSM/EE delays the need to obtain additional
18 generating resources to meet ever-increasing levels of demand, which decreases the
19 relative energy costs of all customers, even those who do not directly participate in
20 such programs. Customers who do participate in DSM/EE programs can enjoy lower
21 electric bills by being compensated to participate in load-reduction programs and by
22 using relatively less electricity by being more energy efficient. Also, DSM/EE
23 programs provide customers the benefit of a safer, more reliable electric grid by

1 enabling the Companies to reduce load at times of peak demand and in other
2 emergencies.

3 **Q. Briefly, what is the Companies' history concerning DSM/EE programs?**

4 A. The Companies' initial DSM programs were implemented in 1994. Since then, the
5 Companies have worked with their Energy Efficiency Advisory Group (a group of
6 customer-stakeholders, including low-income advocates, formerly called the "DSM
7 Collaborative") to grow and improve the Companies' set of DSM/EE offerings,
8 obtaining Commission approval for those offerings in 1996, 1998, and 2001. The
9 Companies have in place today a suite of successful DSM/EE programs, which the
10 Commission approved in its March 31, 2008 Order in Case No. 2007-00319. In that
11 Order, the Commission approved the existing programs, as well as budgets and cost-
12 recovery for the programs, to be in effect through 2014.

13 **Q. How have the Companies' current DSM/EE programs performed to date?**

14 A. The Commission-approved DSM/EE programs the Companies now deploy have
15 delivered impressive results for their customers. Through 2010, the Companies'
16 DSM/EE programs have produced cumulative energy savings of approximately
17 207,900 MWh, gas savings of 4 million ccf, and a cumulative demand reduction of
18 182 MW—enough demand reduction to avoid the need for a gas-fired combustion
19 turbine.

20 **The Continuing Need for, and the Promise of, DSM/EE Initiatives**

21 **Q. Is there a continuing need for DSM/EE programs?**

22 A. Yes; indeed, the need for such programs is growing, as Kentucky's government has
23 recognized at the very highest levels, including this Commission. Most recently, the

1 Commission expressed its clear desire to see greater development and deployment of
2 DSM/EE programs in its February 17, 2011 Final Order in Case No. 2010-00222:

3 The Commission believes that conservation, energy efficiency
4 and DSM, generally, will become more important and cost-
5 effective as there will likely be more constraints placed upon
6 utilities whose main source of supply is coal-based generation.

7 ...

8 [T]he Commission believes that it is appropriate to strongly
9 encourage Meade, and all other electric energy providers, to
10 make a greater effort to offer cost-effective DSM and other
11 energy efficiency programs.¹

12 The Companies certainly agree with the Commission's view, and the new and
13 expanded DSM/EE programs proposed in this filing are a means of accomplishing the
14 Commission's stated goal.

15 In addition to the Commission, other top-level Kentucky government officials
16 have emphasized the importance of DSM/EE programs to the Commonwealth.
17 Following the Commission's March 31, 2008 approval of the Companies' current
18 suite of DSM/EE programs, Governor Beshear's administration released in November
19 2008 a report entitled, "Intelligent Energy Choices for Kentucky's Future." The
20 report indicates that Kentucky's energy usage is projected to grow slightly more than
21 40% between 2008 and 2025 in the absence of energy efficiency efforts. To meet that
22 demand without DSM/EE would require huge new investments in energy generation
23 and delivery infrastructure. To avoid at least some of that cost, the report outlines
24 seven strategies to diversify sources of energy, conserve energy, and become more
25 energy-efficient to reduce demand. The very first strategy stated in the Governor's

¹ *In the Matter of: Application of Meade County Rural Electric Cooperative Corporation to Adjust Electric Rates*, Case No. 2010-00222, Order at 15-16 (Feb. 17, 2011).

1 report is, “Strategy 1: Improve the Energy Efficiency of Kentucky’s Homes,
2 Buildings, Industries, and Transportation Fleet,” with a strategic goal of having
3 “[e]nergy efficiency ... offset at least 18 percent of Kentucky’s projected 2025 energy
4 demand.”² As Governor Beshear stated in the report, “For Kentucky to be a national
5 energy leader, we must fully integrate the development of our energy resources with
6 our mission to protect the environment. ... The seven strategies, when implemented,
7 will restructure our energy portfolio so that we can use energy in its broadest sense as
8 a tool for economic development and preserving our environment, which Kentucky
9 desperately needs.”³

10 To continue the work begun in the 2008 report, the Secretary of the Kentucky
11 Energy and Environment Cabinet, Dr. Len Peters, convened the Kentucky Climate
12 Action Plan Council in January 2010 to build upon selected provisions of the seven-
13 point strategy and to “focus attention on creating opportunities to build on Kentucky’s
14 progress to date to become more energy efficient, to reduce dependence on foreign
15 oil, to enhance the nation’s energy security, to promote new energy related
16 technologies, and to enhance economic opportunities in Kentucky.”⁴

17 Governor Beshear’s and Secretary Peters’s stated concern about the growing
18 need for greater energy efficiency and other means to address future energy demand
19 growth is well placed. In October of this year, the American Council for an Energy-
20 Efficient Economy released its State Energy Efficiency Scorecard for 2010. The
21 Scorecard ranked Kentucky 36th overall in terms of energy efficiency for 2010, with

² Intelligent Energy Choices for Kentucky’s Future at v-vi. Available at:
http://www.purchaseadd.org/files/pdf/pacro/final_energy_strategy_for_kentucky.pdf

³ *Id.* at xii.

⁴ Available at <http://www.kyclimatechange.us>.

1 utility spending on energy efficiency achieving a score of only 3.5 out of a possible
2 20 points.

3 Finally, as the Companies recently informed the Commission and the public,
4 newly proposed federal environmental regulations could create costs of compliance
5 that could raise electricity costs by twenty percent over the next decade. By acting
6 now, the Commission and the Companies may mitigate these regulations' effects on
7 the Companies' customers by using additional and enhanced DSM/EE programs to
8 reduce the need for new generating resources and to increase customers' energy
9 efficiency.

10 **Q. But is it realistic to expect that DSM/EE programs can make a meaningful**
11 **difference given the magnitude of the energy challenge Kentucky faces?**

12 A. Absolutely. As I noted above, the Companies' DSM/EE programs have already cost-
13 effectively delivered cumulative energy savings of 207,900 MWh, gas savings of 4
14 million ccf, and a cumulative demand reduction of 182 MW—enough demand
15 reduction to avoid the need for a gas-fired combustion turbine. But there is plenty of
16 room for additional cost-effective energy and demand savings; indeed, the
17 Companies' 2008 Integrated Resource Plan identified 12 additional possible DSM/EE
18 programs that could produce a projected demand savings of 109 MW by year six of
19 the proposed program plan, and a total DSM/EE-related demand reduction of 539
20 MW. The Companies believe their proposed portfolio of enhanced and new DSM/EE
21 programs will achieve and exceed those Commission-reviewed goals by producing an
22 additional 309 MW of demand savings, nearly 1.4 million MWh of energy savings,

1 and nearly 14.3 million ccf of gas savings by year seven of the proposed program
2 plan.

3 Moreover, the Electric Power Research Institute issued a report in January
4 2009 entitled, "Assessment of Achievable Potential from Energy Efficiency and
5 Demand Response Programs in the U.S." It states that nationwide energy
6 consumption in residential, commercial, and industrial sectors will grow at an annual
7 rate of 1.07% between 2008 and 2030, with consumption increasing by 26% in total
8 over that period. But the report further states that energy efficiency programs have a
9 realistic potential to reduce this rate of increase by 22% to 0.83% per year from 2008
10 through 2030.

11 Therefore, there are solid reasons to believe that DSM/EE programs can
12 meaningfully reduce the growing energy and demand challenge Kentucky faces.

13 **The Companies' Proposed DSM/EE Portfolio and How the Companies Formulated It**

14 **Q. What DSM/EE programs do the Companies have in place today, and what new
15 programs are they proposing in this proceeding?**

16 **A. The Commission-approved DSM/EE programs the Companies now provide are:**

- 17 • Residential and Commercial Load Management / Demand Conservation
18 Program
- 19 • Commercial Conservation / Commercial Incentive Program
- 20 • Residential Conservation / Home Energy Performance Program
- 21 • Residential Low Income Weatherization Program (WeCare)
- 22 • Program Development and Administration
- 23 • Residential High Efficiency Lighting

- 1 • Residential New Construction
- 2 • Residential and Commercial HVAC Diagnostic and Tune Up
- 3 • Customer Education and Public Information
- 4 • Dealer Referral Network

5 Of those programs, the Companies propose to continue the following programs
6 without change through 2014: Residential High Efficiency Lighting, Residential New
7 Construction, Residential and Commercial HVAC Diagnostic and Tune Up,
8 Customer Education and Public Information, and the Dealer Referral Network. The
9 Companies are proposing revisions and enhancements to the remaining current
10 programs, and are requesting they be approved to continue through the end of the
11 newly proposed program plan.

12 In addition to the current DSM/EE program suite, the Companies propose in
13 this proceeding to add the following new programs for an initial term of seven years:

- 14 • Smart Energy Profile Program
- 15 • Residential Incentive Program
- 16 • Residential Refrigerator Removal Program

17 **Q. Do the Companies use cost-benefit tests to help determine which DSM/EE**
18 **programs to propose to continue or implement?**

19 A. Yes. The Companies rigorously analyze existing and potential DSM/EE programs
20 using the industry-standard cost-benefit tests set out in the California Standard
21 Practice Manual,⁵ which the Commission explicitly requires utilities to apply: “Any
22 new DSM program or change to an existing DSM program shall be supported by ...

1 [t]he results of the four traditional DSM cost-benefit tests [Participant, Total Resource
2 Cost, Ratepayer Impact, and Utility Cost tests].”⁶ The Manual defines the four tests
3 as follows:

- 4 • **The Participant Test:** The Participants Test is the measure of the quantifiable
5 benefits and costs to the customer due to participation in a program. Since
6 many customers do not base their decision to participate in a program entirely
7 on quantifiable variables, this test cannot be a complete measure of the
8 benefits and costs of a program to a customer.⁷

- 9 • **The Ratepayer Impact Measurement Test:** The Ratepayer Impact Measure
10 (RIM) test measures what happens to customer bills or rates due to changes in
11 utility revenues and operating costs caused by the program. Rates will go
12 down if the change in revenues from the program is greater than the change in
13 utility costs. Conversely, rates or bills will go up if revenues collected after
14 program implementations are less than the total costs incurred by the utility in
15 implementing the program. This test indicates the direction and magnitude of
16 the expected change in customer bills or rate levels.⁸

- 17 • **The Total Resource Cost Test:** The Total Resource Cost Test measures the
18 net costs of a demand-side management program as a resource option based
19 on the total costs of the program, including both the participants’ and the
20 utility’s costs. ... This test represents the combination of the effects of a
21 program on both the customers participating and those not participating in a
22 program. In a sense, it is the summation of the benefit and cost terms in the
23 Participant and the Ratepayer Impact Measure tests, where the revenue (bill)
24 change and the incentive terms intuitively cancel (except for the differences in
25 net and gross savings).⁹

- 26 • **The Program Administrator Cost Test (or “Utility Cost Test”):** The
27 Program Administrator Cost Test measures the net costs of a demand-side
28 management program as a resource option based on the costs incurred by the
29 program administrator (including incentive costs) and excluding any net costs
30 incurred by the participant. The benefits are similar to the TRC [Total
31 Resource Cost] benefits. Costs are defined more narrowly.¹⁰

⁵ The Manual is available online at: http://www.energy.ca.gov/greenbuilding/documents/background/07-J_CPUC_STANDARD_PRACTICE_MANUAL.PDF.

⁶ *In the Matter of the Joint Application of the Members of the Louisville Gas and Electric Company Demand-Side Management Collaborative for the Review, Modification, and Continuation of the Collaborative, DSM Programs, and Cost Recovery Mechanism*, Case No. 1997-00083, Order at 20 (Apr. 27, 1998).

⁷ Manual at 8.

⁸ Manual at 13.

⁹ Manual at 18.

¹⁰ Manual at 23.

The Companies performed the four traditional DSM/EE cost-benefit tests for each of the proposed new programs and modifications to existing programs, which show that each program passed the Participant and Total Resource Cost tests (a score of 1.0 or greater is “passing,” meaning that the value of program’s benefits is equal to or greater than the cost of the program), as shown below:

Status	Program	DSMore Scoring			
		Participant Test	Utility Cost Test	Ratepayer Impact Test	Total Resource Cost Test
Existing	Residential High Efficiency Lighting	8.50	3.32	0.47	2.26
	Residential New Construction	2.45	2.73	0.77	1.52
	Residential HVAC Tune Up	8.28	1.44	0.66	1.26
	Commercial HVAC Tune Up	23.45	3.40	0.77	2.96
	Customer Education & Public Information	NA	0.00	0.00	0.00
	Dealer Referral Network	NA	0.00	0.00	0.00
	Residential Responsive Pricing (RRP)	NA	0.00	0.00	0.00
Revised	Program Development & Administration	NA	0.00	0.00	0.00
	Residential Conservation (HEPP)	5.69	1.85	0.55	1.42
	Residential Load Management	NA	1.93	1.35	3.62
	Commercial Load Management	NA	2.53	1.76	3.96
	Residential Low Income Weatherization	NA	2.08	0.60	2.08
	Commercial Conservation/Rebates	7.03	16.40	1.00	6.15
New	Smart Energy Profile	NA	2.36	0.60	2.36
	Residential Refrigerator Removal	NA	1.53	0.44	1.84
	Residential Incentives	3.28	4.50	0.80	2.31
Overall Portfolio (Existing, Revised, & New)		8.24	3.39	0.82	3.01

Also, the Companies’ proposed DSM/EE portfolio, taken as a whole, passes the Participant, Utility Cost, and Total Resource Cost Tests.

Q. Do the Companies consult with other parties when determining which DSM/EE programs to propose and implement?

A. Yes, the Companies make a substantial effort to obtain input from a wide variety of interested parties. First and foremost, the Companies meet with their Energy Efficiency Advisory Group to obtain feedback about existing and proposed programs. The group includes representatives from the Governor’s Office of Energy Policy, low-income advocacy groups, governmental environmental protection agencies, and

1 businesses. The Companies also consult with the Attorney General about their
2 DSM/EE plans.

3 In formulating this filing, the Companies held a meeting with the Advisory
4 Group in September 2009 to solicit feedback. The Companies presented to the Group
5 a high-level overview of enhancements to existing DSM/EE programs and new
6 programs the Companies were considering. The Group reviewed seventeen
7 enhancements and new programs, finding ten of them to be useful, relevant, and a
8 prudent use of consumer dollars.

9 Based on this feedback, the Companies conducted further analysis on the
10 identified ten programs. After completing the analysis, the Companies again met
11 with the Advisory Group in July 2010 to share their analysis and to obtain further
12 feedback.

13 The third opportunity for the Companies to communicate with representatives
14 of various customer groups came in November and December 2010. During this
15 time, the Companies met individually with the Attorney General, low-income
16 advocacy groups, community action councils, the Kentucky Department for Energy
17 Development and Independence, the Kentucky School Board Association, AARP,
18 and the Advisory Group.

19 The eight enhancements and new programs presented herein are a result of the
20 combined effort of the Companies and all the parties they consulted with, most
21 notably the Advisory Group.

22 **Q. Do the Companies take into account their most recent Integrated Resource Plan**
23 **when formulating new DSM/EE proposals?**

1 A. Yes, the Companies evaluate proposed enhancements to existing programs and new
2 programs for consistency with the Companies' most recent Integrated Resource Plan
3 ("IRP"). In fact, putting in place the appropriate set of cost-effective DSM/EE
4 programs to achieve the demand savings goals set out in the Companies' most recent
5 IRP is one of the reasons the Companies are making this filing.

6 The Companies filed their most recent Joint IRP in April 2008 in Case No.
7 2008-00148, which contained a comprehensive evaluation of potential DSM/EE
8 programs. During the analysis giving rise to the 2008 IRP, the Companies reviewed
9 80 potential DSM/EE programs, of which 28 passed through to a second stage of
10 review. Of those 28 programs, 12 passed the overall evaluation process and were
11 included in the IRP as providing potentially 109 MW of demand reduction by 2016.¹¹
12 The IRP further anticipated a total demand reduction from DSM/EE programs of 539
13 MW that included 85 MWs associated with a smart meter expansion.

14 This filing includes components from the 2008 IRP, including the residential
15 rebates for window films and secondary refrigerator removal programs, but is more
16 comprehensive than the 2008 IRP's set of recommended programs. As I stated
17 above, the proposed set of enhanced and new DSM/EE programs will have a total
18 projected an additional demand reduction of 309 MW by the end of year seven of the
19 program plan bringing the total DSM/EE demand reduction to 491 MWs, which if
20 achieved, should allow the Companies to meet and exceed the 2008 IRP goal¹².

¹¹ *In the Matter of the 2008 Joint Integrated Resource Plan of Louisville Gas and Electric Company and Kentucky Utilities Company*, Case No. 2008-00148, IRP Vol. 3, Screening of Demand-Side Management Options (April 21, 2008).

¹² 2008 IRP goal of 539 less 85 MWs associated with the expansion of smart meters.

1 **Q. What are the projected overall costs and benefits of the DSM/EE program**
 2 **portfolio the Companies are proposing in this proceeding?**

3 A. The Companies project that during the seven-year program plan for the existing and
 4 proposed programs, customers will, in the aggregate, realize a total cost savings of
 5 \$427 million, reduce demand by an additional 309 MW, and realize a total energy and
 6 gas savings from year one through year seven of nearly 1.4 million MWh and nearly
 7 14.3 million ccf, respectively. The tables below show the savings broken down by
 8 year:

Incremental	Projected Energy Savings for Energy Efficiency Programs (Revised and New)							
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
MWH	103,750	141,593	150,208	199,702	200,212	201,308	202,405	1,199,179
MW	40	51	51	60	58	58	58	287
CCF	752,802	1,176,910	1,563,109	2,411,028	2,492,232	2,578,028	2,663,324	13,967,993

Incremental	Projected Energy Savings for Energy Efficiency Programs (Existing, Revised, and New)							
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
MWH	174,211	191,740	196,939	243,769	200,212	201,308	202,405	1,410,584
MW	49	56	55	64	58	58	58	309
CCF	831,834	1,549,330	1,646,392	2,536,864	2,492,232	2,578,028	2,663,324	14,293,503

Cumulative	Projected Energy Savings for Energy Efficiency Programs (Existing, Revised, and New)							
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
MWH	174,211	365,951	562,890	806,659	1,006,871	1,208,179	1,410,584	
MW	49	99	143	196	234	271	309	
CCF	831,834	2,381,163	4,027,556	6,564,420	9,056,652	11,634,680	14,298,003	

9
 10 To achieve these benefits, the Companies project a total DSM/EE portfolio
 11 cost of \$263.8 million from year one through year seven. Of that amount, the
 12 Commission approved \$104.4 million in Case No. 2007-00319 for the existing
 13 programs through 2014. Therefore, the proposed incremental cost of the new
 14 DSM/EE portfolio for the seven-year program plan is \$159.4 million.

State	Program (\$000s)	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Total
Existing	Residential High Efficiency Lighting	\$4,610	\$3,447	\$3,490	\$3,543				\$15,090
	Residential New Construction	\$1,384	\$1,204	\$1,251	\$1,402				\$5,271
	Residential HVAC Tune Up	\$233	\$453	\$492	\$338				\$2,046
	Commercial HVAC Tune Up	\$205	\$425	\$467	\$312				\$1,939
	Customer Education & Public Information	\$3,541	\$3,445	\$3,632	\$3,866				\$14,484
	Danish Referral Network	\$213	\$126	\$129	\$163				\$692
	Residential Responsive Pricing (RRP)	\$125							\$125
Retail	Program Development & Administration	\$1,260	\$1,297	\$1,335	\$1,373	\$1,421	\$1,471	\$1,522	\$9,690
	Residential Conservation (HEFF)	\$1,461	\$1,843	\$2,207	\$2,255	\$2,250	\$2,289	\$2,361	\$14,666
	Residential Low Income Weatherization	\$2,368	\$3,001	\$3,957	\$4,947	\$5,887	\$6,862	\$7,843	\$34,861
	Residential Load Management	\$8,648	\$11,996	\$11,823	\$13,821	\$15,601	\$14,040	\$14,545	\$88,474
	Commercial Load Management	\$450	\$548	\$571	\$647	\$606	\$625	\$647	\$4,095
	Commercial Conservation Rebates	\$3,255	\$3,267	\$3,316	\$3,339	\$3,369	\$3,400	\$3,431	\$23,377
New	Smart Energy Profile	\$1,371	\$2,277	\$2,241	\$3,311	\$3,344	\$3,433	\$3,468	\$19,445
	Residential Refrigerator Removal	\$816	\$1,286	\$1,926	\$2,057	\$2,068	\$2,150	\$2,211	\$12,525
	Residential Incentives	\$1,267	\$1,846	\$2,646	\$2,683	\$2,661	\$2,669	\$2,707	\$16,790

Budget (Existing, Revised, & New)	\$32,109	\$36,850	\$39,672	\$44,438	\$35,209	\$36,939	\$38,736	\$263,852
Total Residential (Existing, Revised, & New)	\$27,208	\$31,457	\$34,051	\$38,721	\$30,523	\$32,178	\$33,896	\$228,033
Total Commercial (Existing, Revised, & New)	\$4,902	\$5,394	\$5,521	\$5,717	\$4,686	\$4,761	\$4,839	\$35,819

Residential and Commercial Load Management (\$000s)

Capital Expenditures	\$3,208	\$4,469	\$4,071	\$4,151	\$3,681	\$3,753	\$3,827	\$27,159
O&M Expenditures	\$5,890	\$8,075	\$8,323	\$10,318	\$10,526	\$10,913	\$11,366	\$66,410

1
2 **Q. Why are the Companies proposing to capitalize part of their Residential and**
3 **Commercial Load Management / Demand Conservation Program expenditures?**

4 A. The Companies propose to capitalize the costs associated with the newly installed
5 switches and programmable thermostats used in the Load Management / Demand
6 Conservation Program. Because this equipment has proven to yield benefits to the
7 Companies and their customers over a longer period of time (i.e., more than one
8 year), capitalization of the costs of this equipment will more appropriately match
9 revenues and costs going forward.

10 A full description of the regulatory treatment for the costs associated with the
11 Companies' proposed Load Management/Demand Conservation program is provided
12 in the testimony of Lonnie E. Bellar, VP State Regulation and Rates.

13 **Q. What monthly bill impact will the Companies' proposed DSM/EE portfolio have**
14 **on an average residential customer?**

15 A. The Companies project that the monthly bill impact of the new DSM/EE programs
16 and program enhancements will be \$2.06 for LG&E residential electric customers and

1 \$2.41 for KU residential electric customers using 1,000 kWh per month. (The current
2 DSM/EE charge for LG&E residential electric customers is \$2.00 and \$2.17 for KU
3 residential electric customers.) The Companies project that the monthly gas bill
4 impact of the new DSM/EE programs and program enhancements will be \$1.68 for
5 LG&E residential gas customers using 70 Ccf per month. (The current DSM/EE
6 charge for LG&E residential gas customers is \$1.23.)

7 **Ensuring the Value and Performance of the Companies' DSM/EE Programs**

8 **Q. How do the Companies ensure that their DSM/EE programs remain effective**
9 **after they are approved and implemented?**

10 A. The Companies recognize the importance of program evaluation, measurement, and
11 verification, so they examine each program on an ongoing basis as it relates to
12 program design, delivery, impacts, and return on investment. This process ensures
13 the quality and effectiveness of the programs, optimal use of resources, and
14 responsiveness to customers' needs. The Companies typically perform program
15 evaluation in two phases, process evaluation and impact evaluation. Process
16 evaluation is a systematic assessment of a utility's energy-efficiency program for the
17 purposes of improving its design, delivery, and the usefulness and quality of the
18 services delivered to the customers. Impact evaluation focuses on quantifying the
19 energy and demand savings and other economic benefits of the program. The goal of
20 the evaluation, measurement, and verification process is the continual improvement
21 of the Companies' DSM/EE programs.

22 The Companies will use this process to ensure that all of the programs
23 contained in this filing remain prudent—and continually improving—uses of
24 customers' dollars. If the Companies' reviews reveal any program to be cost-

1 ineffective or otherwise underperforming, the Companies will discontinue the
2 program and notify the Commission by a letter or motion.

3 **Summaries and Evaluations of Existing Programs to Be Continued with Modifications**

4 **Q. Please describe the Residential and Commercial Load Management / Demand**
5 **Conservation Program and the changes the Companies propose to make to it.**

6 A. The existing Demand Conservation Program is voluntary and has been operational
7 since 2001. Demand Conservation employs switches and thermostats in homes and
8 small businesses to help reduce the demand for electricity during peak times. The
9 program uses one-way paging signals to communicate with the switches and
10 thermostats to cycle central air conditioning units, heat pumps, electric water heaters,
11 and pool pumps off and on through a predetermined sequence. (Demand savings are
12 estimated to be approximately 1 kW per air conditioner device and approximately 0.4
13 kW per water heater switch.) If an air conditioner is cycled off for thirty minutes in a
14 one hour period, it is considered a 50% control strategy. The strategy has been to
15 control between 30% and 45% depending on temperature and customer equipment.

16 Demand Conservation is the most successful program in the Companies'
17 DSM/EE portfolio in terms of participation and demand savings, and it passes all four
18 of the California Standard Practice Manual tests. Success, however, has brought a
19 new challenge: the Companies have reached a market saturation rate of over 20%. To
20 address this challenge, the Companies are seeking approval for the following
21 proposed program enhancements: (1) the addition of another full-time employee to
22 assist in outreach efforts to the multi-family and commercial customer segments; (2)
23 the ability to modify and increase the financial incentives to attract those customers
24 who have not been interested in the program; and (3) extension of the current

1 Residential and Commercial Load Management / Demand Conservation Program
2 through year seven of the proposed program plan.

3 The Companies are also facing a technological challenge that impacts market
4 saturation for this program. As I described above, the Demand Conservation Program
5 currently relies on paging technology to activate load-control switches. In the areas
6 of the Companies' service territories where such technology is available, Demand
7 Conservation has reached a market saturation rate of approximately 30%. And the
8 area where such technology is available has shrunk and is continuing to shrink; the
9 proliferation of cellular phones and wireless technology has caused traditional analog
10 paging companies to reduce or eliminate operations. The Companies are, therefore,
11 currently studying communications strategies for all customers and intend to
12 implement solutions that will allow all customers to participate in the program if they
13 so choose.

14 The Companies' goal is to install load control switches and load control
15 programmable thermostats on central air conditioners of an additional 91,800
16 residential and 3,540 commercial air conditioners between year one and year seven of
17 the program plan. If all participation goals are met by the end of year seven, the total
18 program installation for the Demand Conservation program will be approximately
19 220,000 devices, which could represent a potential controllable load of up to 220 MW
20 and would represent a significant resource for the Companies to reduce peak demand
21 and delay the need for additional generating resources.

22 **Q. Please describe the Commercial Conservation (Energy Audits) / Commercial**
23 **Incentives Program and the changes the Companies propose to make to it.**

1 A. The Commercial Conservation / Commercial Incentives Program is designed to
2 provide energy-efficiency opportunities for the Companies' commercial customers
3 through energy audits and to increase the implementation of energy-efficiency
4 measures identified through the audit by providing financial incentives to assist with
5 the replacement of aging and less efficient equipment. The Commercial Conservation
6 component of this program has been successful in achieving targets established in the
7 2007 filing.

8 But the Commercial Incentives component has struggled to meet targets
9 established in the 2007 filing largely due to the downturned economy. Commercial
10 customers have indicated that, even with incentives and rebates, the struggling
11 economy prevents them from making new investments in equipment, even though
12 they know such equipment would produce long-term energy savings. They have,
13 however, indicated that rebates and incentives to buy energy-efficient equipment
14 would be more attractive and effective if (1) they could be used for equipment that is
15 not included on the Companies' prescriptive list, and (2) they could receive multiple
16 years' worth of rebates in a single year to help fund their new equipment purchases.

17 In view of this customer feedback and to achieve their energy efficiency and
18 demand reduction goals, the Companies seek to enhance this program in several
19 ways: (1) to add refrigeration equipment to the energy-efficiency retrofits eligible for
20 incentives; (2) to add Commercial Customized Incentives to encourage energy-
21 efficient retrofits for customers with less typical technologies, including retrofits not
22 covered by the existing Commercial Conservation / Incentive Program (incentives
23 available to all customers in this program's rate classes will be developed based upon

1 a \$100 per kW for calculated efficiency improvements); and (3) to permit commercial
2 customers to receive multi-year incentives in a single year where such multi-year
3 incentives do not exceed the aggregate amount of \$100,000 per facility and no
4 incentive was provided in the immediately preceding year. None of these
5 improvements would increase the incentives portion of the program budget above
6 today's levels, though some additional funds will be required to obtain third-party
7 assistance with the expanded rebates initiative.

8 Also, because the Commercial Conservation (commercial audits) part of the
9 program has been successful to date, the Companies seek to extend that part of the
10 program as-is through year seven of the new program plan.

11 The Companies' goal is to have 3,080 program participants in each of
12 LG&E's and KU's service territories for year one through year seven of the program
13 plan. If the Companies can achieve that goal, the Commercial
14 Conservation/Commercial Incentives Program should achieve cumulative energy
15 savings of almost 385,000 MWh, a demand reduction of 144.8 MW, and gas savings
16 of almost 1.1 million ccf.

17 **Q. Please describe the Residential Conservation / Home Energy Performance**
18 **Program and the changes the Companies propose to make to it.**

19 A. The Residential Conservation Program / Home Energy Performance Program is
20 designed to help customers reduce their home energy costs using online or on-site
21 energy audits. The program works with customers to identify specific steps they can
22 take to reduce energy costs, making them better energy managers.

1 The online energy audit component of this program will remain unchanged. It
2 provides customers a list of ways to improve energy efficiency at their homes and
3 four free compact fluorescent light bulbs, all at a relatively low program cost.
4 Therefore, the Companies do not believe changes to this part of the program are
5 necessary or appropriate at this time.

6 The Companies do, however, propose a significant enhancement to the
7 existing on-site energy audit program by implementing the Home Energy
8 Performance Program. The new program will continue measures already included in
9 the current program, such as a blower-door test and the installation of air-sealing
10 measures, compact fluorescent light bulbs, and water-saving faucet and shower
11 fixtures, as part of an on-site audit. This Tier One audit provides energy savings
12 measures that will provide homeowners up to 10% savings of their annual usage, and
13 gives recommendations for achieving even greater savings. But the new program will
14 go further by providing cash incentives to customers who make the effort and
15 investment to achieve greater energy savings than those the Tier One audit provides.
16 More specifically, customers who install measures to achieve an additional 10%
17 energy savings (i.e., a total energy savings of 20% from pre-audit levels), which
18 savings the Companies will verify with a “test-out” follow-up energy audit, will
19 receive a \$500 incentive (called a “Tier Two Incentive”). Customers who go even
20 further and achieve an additional 30% energy savings (i.e., a total energy savings of
21 40% from pre-audit levels), which savings the Companies will also verify with a
22 “test-out” follow-up energy audit, will receive a \$1,000 incentive (called a “Tier
23 Three Incentive”).

1 The Companies are also exploring the possibility of partnering with the
2 Kentucky Home Performance Program, which is a similar program run by the state.
3 The programs may be able to create synergies by avoiding redundant on-site audits
4 and by cooperating to achieve greater energy efficiency measure installations in
5 audited homes.

6 The long term goal of the new Home Energy Performance Program is to
7 increase the number of audits from 800 to 2,000 annually (total for both Companies)
8 for the onsite audit. The Companies believe this is an attainable goal due to additional
9 marketing funds and incentive availability.

10 Likewise, the Companies' participation goal in the online audit is increased
11 beginning in year one of the program plan, as there will be cross promotion with the
12 onsite-audit Program. The Companies hope to reach and maintain an annual
13 participation goal of 6,000 participants (total for both Companies) beginning in year
14 three of the plan.

15 If the Companies can achieve these goals, they should achieve cumulative
16 energy savings by the end of year seven of almost 33,000 MWh, a demand reduction
17 of 8.4 MW, and gas savings of almost 1.1 million ccf.

18 **Q. Please describe the Residential Low Income Weatherization (WeCare) Program**
19 **and the changes the Companies propose to make to it.**

20 A. The Residential Low Income Weatherization (WeCare) Program is an education and
21 weatherization program designed to reduce energy consumption of the Companies'
22 low-income customers. The program is designed to provide free energy audits and

1 energy education, perform blower-door tests, and install weatherization and energy
2 conservation measures on qualified houses.

3 To address the growing need in this customer segment, the Companies are
4 seeking approval for the following program enhancements: (1) additional funds that
5 will allow for increased weatherization measures for the low-income customer
6 segment, further increasing energy savings; (2) to increase the number of customers
7 served over the term of the program plan; and (3) to extend the WeCare Program
8 through year seven of the proposed program plan. This increased funding request
9 comes as a result of customer feedback as well as additional opportunities identified
10 while providing weatherization measures in customers' homes. As a result, increases
11 to the funding level for program tiers and increasing the number of customers served
12 are the only changes being proposed to this program; all other aspects of the program,
13 including, but not limited to, program eligibility and home ownership status, will
14 remain the same.

15 The proposed expansion in allowable measure cost for Tier C customers will
16 allow work to be done on customers' HVAC systems, which can deliver significant
17 energy savings. As proposed, the WeCare program would provide the following
18 benefits:

19

Tier	Annual Energy Consumption	Current Allowable Measure Cost	Proposed Allowable Measure Cost
A	Up to 1,299 Ccf or up to 11,499 KWh	\$200	\$350
B	1,300 to 1,800 Ccf or 11,500 to 16,000 KWh	\$750	\$1,000
C	Greater than Tier B	\$1,700	\$2,100

20

1 The residential participation goal for this program is to provide an audit,
2 energy education, and home weatherization services to 18,900 low-income
3 participants between years one and seven of the program plan. When the Companies
4 achieve these goals, they will achieve cumulative energy savings by the end of year
5 seven of almost 41,455 MWh, a demand reduction of 4,130 MW, and gas savings of
6 almost 3.2 million ccf.

7 The Companies believe there are opportunities for increased collaboration
8 with community action agencies and other organizations that provide direct social
9 services to low- and moderate-income customers in the service territory. The
10 Companies will continue to work with such entities to assist low- and moderate-
11 income customers.

12 **Q. Please describe the Program Development and Administration Program and the**
13 **changes the Companies propose to make to it.**

14 A. Program Development and Administration was established to capture costs incurred
15 in the development and administration of energy efficiency programs where it is
16 difficult to assign costs specifically to an individual program. These costs include
17 consultant costs for new program concept and initial design, market research related
18 to new programming, research and technical evaluation of new technologies and
19 programs, and overall program tracking and management. Program Development and
20 Administration support is essential for the long-term sustainability of the energy
21 efficiency portfolio.

22 The Companies are seeking to add three full-time positions to the current
23 Program Development and Administration infrastructure. High-demand areas that

1 have been identified within the department include procurement, marketing, and
2 financial analysis, all of which are vital to the ultimate success of the Companies’
3 DSM/EE programs.

4 The need for a full-time procurement position is driven by the significant
5 amount of contracting associated with individual programs, including development of
6 scope of work, drafting of Requests for Proposals (“RFPs”), identification of potential
7 bidders, issuing RFPs, evaluation of returned proposals, issuing award
8 recommendations, drafting and negotiating contracts, monitoring contract
9 performance, monitoring market conditions to ensure that existing contracts remain
10 cost-effective, and modifying or amending contracts as conditions change.

11 The second need is for a full-time marketing employee. Because customer
12 participation in DSM/EE programs is voluntary, a substantial amount of program
13 promotion is required to obtain the desired levels of participation. If the additional
14 investment in DSM/EE programs the Companies are requesting is to be fruitful,
15 customers must know about the programs, and this additional employee will be
16 important to that effort.

17 The third identified need is for a full-time financial analyst. The financial
18 analyst will provide direct application of focused research and rigorous economic and
19 statistical analysis, as well as ongoing monitoring of complex metrics associated with
20 individual program and departmental reporting. The analyst position will further
21 support the Companies’ evaluation, measurement, and verification process as it
22 relates to design, delivery, impacts, and return on investment for the various DSM/EE
23 programs.

1 A number of other utilities across the United States have successfully
2 deployed similar behavioral-marketing programs for residential customers. For
3 example, an independent evaluation of Sacramento Municipal Utility District's
4 behavioral-marketing program clearly demonstrates that implementation of a
5 combination of energy efficiency, behavioral science, and direct-marketing tools to
6 residential customers is successfully achieving an average annual demand reduction
7 of 2.2%. (The Sacramento Municipal Utility District impact evaluation is located in
8 Plan Volume IV, Exhibit J-3, attached hereto in Exhibit MEH-1.) Data also indicate
9 that demand reduction is across all households, not just a specific customer segment.

10 The Companies' proposed Smart Energy Profile Program will be comparable
11 to those currently deployed with other utilities. Using available data from the existing
12 behavioral marketing programs across the United States, it is reasonable to expect
13 that the Smart Energy Profile Program will also yield measurable savings that will
14 support the Companies in meeting the increasing regulatory efficiency targets.

15 The Companies' goal is to reach a participation level of 375,000 customers
16 across both Companies by year four of the program plan, and to maintain that level
17 for each year thereafter. If the Companies achieve that goal, they project that they
18 will achieve annual energy savings of over 106,000 MWh, gas savings of almost 1.8
19 million ccf, and a total demand reduction of 20.3 MW.

20 **Q. Please describe the proposed Residential Incentives Program.**

21 A. The Residential Incentives Program is a new program that will encourage customers
22 to purchase various Energy Star appliances, HVAC equipment, or window films that
23 meet certain requirements, qualifying them for an incentive. The program is designed

1 to provide direct financial incentives to customers to purchase and use these products.
2 It is a simple program: as long as a qualifying appliance or product is purchased
3 during the program period, the customer need only submit a completed form and a
4 copy of the proof of purchase (i.e., valid store receipt) to receive the applicable
5 incentive. This is a program that will be available to low-income customers as well:
6 if an assistance agency buys a qualifying appliance for a low-income client, the
7 agency will receive the incentive, freeing up more of the agency's funds to help more
8 people.

9 The Companies' proposed Residential Incentives Program would, in effect, be
10 a continuation of a Kentucky Department for Energy Development and Independence
11 program that received \$4 million from the U.S. Department of Energy for a similar
12 energy efficient appliance rebate initiative. That program achieved favorable results,
13 and the Companies anticipate that this program will perform similarly well.

14 The Companies' goal, therefore, is to provide their customers an additional
15 opportunity for incentive dollars (once those federal stimulus dollars have been
16 exhausted) to continue to support the Commonwealth's efforts to promote energy
17 savings through energy efficiency.

18

1 The proposed incentives are:

Category	Item	Incentive
Appliances	Heat Pump Water Heaters (HPWH)	\$300 per qualifying item purchased
	Washing Machine	\$75 per qualifying item purchased
	Refrigerator	\$100 per qualifying item purchased
	Freezer	\$50 per qualifying item purchased
	Dishwasher	\$50 per qualifying item purchased
Window Film	Window Film	Up to 50% of materials cost only; max of \$200 per customer account; product must meet applicable criteria
HVAC	Central Air Conditioner	\$100 per item purchased per SEER improvement above minimum
	Electric Heat Pump	\$100 per item purchased per SEER improvement above minimum

2 The Companies' goal is to have provided 128,200 incentives by the end of
3 year seven of the program plan. If the Companies can achieve that goal, they should
4 achieve cumulative energy savings by the end of year seven of over 100,720 MWh, as
5 well as a demand reduction of 18.6 MW.

6 **Q. Please describe the proposed Residential Refrigerator Removal Program.**

7 A. The Refrigerator Removal Program is designed to provide removal and recycling of
8 inefficient secondary refrigerators and freezers from customers' households. The
9 removal of these inefficient units will reduce energy consumption and demand. The
10 Companies will work with identified third-party vendors to collect and transport the
11 inefficient appliances to the appropriate recycling centers, which will be responsible
12 for adhering to any local, state, or federal recycling ordinances. To encourage
13 customers to participate in the program, the Companies propose to offer a one-time
14 incentive per customer (proposed to start at \$30, with the ability to increase up to \$40
15 in later years if participation levels should fall, with the incentive level to be reviewed
16 on an annual basis.).

1 Secondary refrigerators can be a significant energy drain and demand booster.
2 Refrigerator models of the late 1970s can use in excess of 1,500 kWh annually, and
3 1980s models can use over 1,000 kWh each year. By way of comparison, modern
4 Energy Star compliant refrigerators use approximately 500 kWh annually. This
5 means a home with a new refrigerator and one from the 1970s could reduce overall
6 refrigeration costs by over 75% by having the older model removed. Because of
7 these sobering numbers, over 20 other utilities across the nation, including California
8 Edison, Georgia Power, National Grid, Austin Energy, and Nevada Energy, have
9 implemented similar programs.

10 The Companies' goal is to have 4,000 customers participate in the program in
11 year one of the program plan (across both Companies), then to increase participation
12 to 10,000 customers across both Companies each year from year three through year
13 seven. If the Companies can achieve that goal, they should achieve cumulative
14 energy savings by the end of year seven of over 46,500 MWh, as well as a demand
15 reduction of 5.3 MW.

16 **Discussion of Existing Programs to Be Continued without Modification**

17 **Q. What are the current DSM/EE programs the Companies do not propose to**
18 **change or extend at this time, and why?**

19 A. The Companies propose to continue the following Commission-approved programs
20 without change through 2014: Residential High Efficiency Lighting, Residential New
21 Construction, Residential and Commercial HVAC Diagnostic and Tune Up,
22 Customer Education and Public Information, and the Dealer Referral Network. A
23 brief summary of each of these programs and its performance to date is included in
24 the Plan document attached hereto as Exhibit MEH-1. These programs do not

1 indicate a need for change or extension at this time due to changed circumstances or
2 insufficient data to support requesting changes or extensions, so the Companies will
3 continue them per the authority the Commission granted for them in Case No. 2007-
4 00319.

5 **Recommendation and Conclusion**

6 **Q. What is your recommendation concerning the Companies' proposed suite of new**
7 **and enhanced DSM/EE programs?**

8 A. I recommend that the Commission approve the Companies' Application. The
9 Companies have seen impressive results from their DSM/EE programs to date, and
10 they expect even better results with additional investment and expanded program
11 offerings. Although these are difficult economic times, I believe the best approach
12 during such times is to look for and pursue means to economize and become more
13 efficient for the long run. That is precisely what the proposed suite of new and
14 enhanced DSM/EE programs offers; it is the opportunity to make an additional
15 investment to obtain even greater savings for years to come. It is also
16 environmentally friendly and enhances the safety and reliability of the Companies'
17 grid. In short, the proposed DSM/EE suite will provide real, tangible benefits for
18 customers, and I recommend that the Commission approve it.

19 **Q. Does this conclude your testimony?**

20 A. Yes.

APPENDIX A

Michael E. Hornung
LG&E and KU Services Company
220 West Main Street
Louisville, Kentucky 40202

Education

Bachelor of Science in Business Administration; University of Louisville	August 1992
E.ON Strategic Business Integration: Generation & Energy Marketing	August 2009

Professional Experience

Louisville Gas and Electric Company and Kentucky Utilities Company

Manager, Energy Efficiency Planning & Development	Aug. 2008 – Present
Senior Rate & Regulatory Analyst	Aug. 2006 – Aug. 2008
Senior Market Policy Analyst	Feb. 2000 – Aug. 2006
Senior Financial Analyst – Risk Management/Trading Controls	June 1999 – Feb. 2000
Senior Accountant at LG&E Energy Marketing	1997 – 1999
Venture Accountant at LG&E Power, Inc.	1996 – 1997
General Labor, LG&E Construction	Summer 1988 & 1989

Professional Memberships

Association of Energy Services Professionals (AESP)	Aug. 2008 – Present
Kentucky Energy Efficiency Working Group	Aug. 2008 – Present
Greater Louisville Inc.: Energy Efficiency Subcommittee	Oct. 2010 – Present
Consortium of Energy Efficiency (CEE)	Jan. 2011 – Present

**Louisville Gas and Electric Company
and
Kentucky Utilities Company**

**Demand-Side Management and
Energy Efficiency Program Plan**

Exhibit MEH-1

Volume I

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**LG&E AND KU
DEMAND-SIDE MANAGEMENT AND
ENERGY EFFICIENCY PROGRAM PLAN**

E.S 0 Executive Summary

LG&E AND KU DEMAND-SIDE MANAGEMENT AND ENERGY EFFICIENCY PROGRAM PLAN

ES.1 Introduction

The need for Demand-Side Management and Energy Efficiency (“DSM/EE”) programs is growing, as Kentucky’s government has recognized at the very highest levels. For example, the Kentucky Public Service Commission (“Commission”) expressed its clear desire to see greater development and deployment of DSM/EE programs in its February 17, 2011 Final Order in Case No. 2010-00222:

The Commission believes that conservation, energy efficiency and DSM, generally, will become more important and cost-effective as there will likely be more constraints placed upon utilities whose main source of supply is coal-based generation.

...

[T]he Commission believes that it is appropriate to strongly encourage Meade, and all other electric energy providers, to make a greater effort to offer cost-effective DSM and other energy efficiency programs.¹

In November 2008, the Commonwealth of Kentucky issued a report entitled, “Intelligent Energy Choices for Kentucky’s Future” (Volume II, Exhibit D). It outlines seven strategies to diversify sources of energy, conserve energy, and become more energy-efficient to reduce demand. The very first strategy stated in the Governor’s report is, “Strategy 1: Improve the Energy Efficiency of Kentucky’s Homes, Buildings, Industries, and Transportation Fleet,” with a strategic goal of having “[e]nergy efficiency ... offset at least 18 percent of Kentucky’s projected 2025 energy demand.”² As Governor Beshear stated in the report, “For Kentucky to be a national energy leader, we must fully integrate the development of our energy resources with our mission to protect the environment...The seven strategies, when implemented, will restructure our energy portfolio so that we can use energy in its broadest sense as a tool for economic development and preserving our environment, which Kentucky desperately needs.”³ The report indicates that Kentucky’s energy usage is projected to grow slightly more than 40% between 2008 and 2025 in the absence of energy efficiency efforts. The Companies have developed a specific strategy to reduce energy consumption and demand through energy-efficiency programming and customer education. The goal of these strategies is to achieve energy and demand reductions outlined in the Companies’ 2008 Integrated Resource Plan (IRP)⁴.

In January 2009, the Electric Power Research Institute (EPRI) disseminated a report entitled, “Assessment of Achievable Potential from Energy Efficiency and Demand Response Programs in

¹ *In the Matter of: Application of Meade County Rural Electric Cooperative Corporation to Adjust Electric Rates*, Case No. 2010-00222, Order at 15-16 (Feb. 17, 2011).

² Intelligent Energy Choices for Kentucky’s Future at v-vi. Available at: http://www.purchaseadd.org/files/pdf/pacro/final_energy_strategy_for_kentucky.pdf

³ Id. at xii.

⁴

the U.S.” It states that energy consumption in residential, commercial, and industrial sectors will grow at an annual rate of 1.07% between 2008 and 2030, with consumption increasing by 26% in total over that period. According to EPRI, energy efficiency programs have a realistic potential to reduce this rate of increase by 22% to 0.83% per year from 2008 through 2030 (Volume III, Exhibit E).

More recently, the American Council for an Energy-Efficient Economy released its State Energy Efficiency Scorecard for 2010. The Scorecard ranked Kentucky 36th overall in terms of energy efficiency for 2010, with utility spending on energy efficiency achieving a score of only 3.5 out of a possible 20 points. With all of the data points that are available on the current trend in consumption, Kentucky has great potential for increased energy efficiency programming (Volume III, Exhibit F).

Recognizing the need and potential for greater energy efficiency in Kentucky, the Secretary of the Kentucky Energy and Environment Cabinet, Dr. Len Peters, convened the Kentucky Climate Action Plan Council in January 2010 to build upon selected provisions of the Kentucky Energy Strategy outlined in *Intelligent Energy Choices for Kentucky’s Future* to “focus attention on creating opportunities to build on Kentucky’s progress to date to become more energy efficient, to reduce dependence on foreign oil, to enhance the nation’s energy security, to promote new energy related technologies, and to enhance economic opportunities in Kentucky.”⁵

The Companies understand the common energy goals and objectives that are set forth at the state level. These goals concern the urgent need to reduce our growing demand for energy by embracing energy efficiency and conservation as a way of life. To advance toward these shared goals the Companies submit their Energy Efficiency Program Plan, which contains enhancements to existing DSM/EE programs and includes new programs that will make the Companies’ DSM/EE Portfolio more comprehensive and effective.

The ability for the Companies to mitigate energy consumption through increased DSM/EE programming has been reviewed by an independent third party evaluation company, ICF International. ICF is a global consulting firm that specializes in energy and climate change, among other areas.⁶ According to the report ICF prepared for the Companies (Volume I, Exhibit A), the Program Plan, if approved and implemented as the Companies have proposed, will allow the Companies to achieve a total demand reduction of 491 MW (putting the Companies on track to meet the goal set out in their 2008 IRP), and will help Kentucky to achieve its overall goal for energy demand reduction.

As the Commonwealth’s largest utilities, serving more than 2.8 million Kentuckians, the Companies seek to educate and empower consumers of all ages to do their part in the fastest, cleanest, most cost-effective method of reducing our growing demand for energy by embracing energy efficiency and conservation as a way of life. The Companies are responding to Governor Beshear’s challenge by proposing to enhance and add to their current energy efficiency portfolio. Programs such as load management, conservation, and incentives will enable the Companies to promote consumer efficiency and educate consumers, thereby reducing customers’ relative energy costs.

⁵ Available at <http://www.kyclimatechange.us>

⁶ See <http://www.icfi.com>.

The Companies received approval for their current portfolio of energy efficiency programs from the Commission on March 31, 2008, in Case No. 2007-00319. The Companies requested, and the Commission approved, a seven-year duration for the programs in light of the significant investment in time and resources required to initiate operations, obtain participants, and achieve the projected demand and energy savings. Case No. 2007-00319 represented a significant expansion and emphasis on customer energy efficiency. The three years since the approval of these programs has granted greater insight into the challenges and obstacles associated with the outlined metrics within that program plan. As a result of the lessons learned, the Companies seek to enhance the following programs: Residential and Commercial Load Management; Commercial Conservation; Residential Conservation; Residential Low Income Weatherization Program; and Program Development and Administration.

In addition to enhancing several currently approved programs, the Companies seek approval for additional DSM/EE programs that will further increase participation opportunities for customers. These programs include the Smart Energy Profile Program, Residential Incentives Program, and a Residential Refrigerator Removal Program.

Programs the Companies proposed and the Commission approved in Case No. 2007-00319 not included in this program plan will remain unchanged in regard to programming, budgets, and associated metrics. The Companies propose to continue these existing programs through 2014. The rationale for the Companies not seeking any changes to these particular programs at this time is that the programs can be categorized as “market transformation programs” or are currently operating satisfactorily within the approved program designs, and therefore do not warrant enhancements. These programs include Residential High Efficiency Lighting, Residential New Construction, Residential and Commercial HVAC Diagnostic and Tune Up, Customer Education and Public Information, and the Dealer Referral Network. The complete program plans for these unchanged, existing programs are in Volume III, Exhibit G.

The specific enhancements to existing programs and the new programs proposed for the portfolio Demand Side Management and Energy Efficiency portfolio include:

Enhancement to Existing DSM/EE Program Plan

- Residential and Commercial Load Management / Demand Conservation Program – enhancement to customer incentives and restructuring of customer enrollment goals.
- Commercial Conservation / Commercial Incentives Program – addition of customized incentives and refrigeration incentives for commercial customers.
- Residential Conservation / Home Energy Performance Program – enhancement of the current residential audit to include incentives to implement energy retrofit measures recommended through the energy audit process.
- Residential Low Income Weatherization Program (WeCare) – enhancement to allow for additional weatherization measures to the low income customer segment and increasing the number of customer served over the program plan.

- Program Development and Administration – additional staff infrastructure to continue to research and plan future programming.

New Programs Analyzed for Inclusion in the DSM/EE Program Plan

- Smart Energy Profile Program
- Residential Incentives Program
- Residential Refrigerator Removal Program

The program implementation plans described in this filing represent the Companies' plans based on the best information currently available. Energy efficiency programs operate in a dynamic environment with customer attitudes, regulations, and the marketplace constantly changing.

The Companies developed the proposed DSM/EE Plan in collaboration with their Energy Efficiency Advisory Group. The Companies established the Group in 2000 to provide a forum for open communication and sharing of information to benefit the customers served by the Companies' DSM/EE programs. The Group comprises representatives of various customer groups, including residential, commercial, and low-income, as well as representatives of environmental advocacy organizations. Specific activities of the Group include: bringing forward ideas and supporting data for cost effective energy efficiency programs; reviewing proposed new programs and offerings to ensure customer acceptance, measurable results, and cost-effectiveness; reviewing the progress and performance of current energy efficiency programs; and offering suggestions to improve the programs' productivity and effectiveness.

The Companies held a meeting with the Group in September 2009 to solicit feedback concerning the proposed Program Plan. Attendees included representatives from the Lexington Community Action Council, Kentucky Association for Community Action, Home Builders Association of Kentucky, Governor's Office of Energy Policy, Metro Housing Coalition, Louisville Metro Air Pollution Control District, Green and Healthy Schools, Kentucky National Energy Education Development Project, and Kentucky Energy Efficiency Programs for Schools. (The sign-in sheet and meeting minutes from the meeting can be located in Volume III, Exhibit G-1.) The Companies presented to the Group a high-level overview of enhancements to existing DSM/EE programs and new programs the Companies were considering. The Group reviewed seventeen enhancements and new programs, finding ten of them to be useful, relevant, and a prudent use of consumer dollars. Based on this feedback, the Companies conducted further analysis on the identified ten programs.

Once additional analysis was completed, the Companies held another meeting in July 2010 with the Group to obtain further feedback. Attendees included representatives from the Governor's Office of Energy Policy, Lexington Community Action Council, Louisville Metro Air Pollution Control District, Kroger Company, Kentucky National Energy Education Development Project, Metro Housing Coalition, and Kentucky Home Builders Association. (The sign-in sheet and meeting minutes from the meeting can be located in Volume III, Exhibit G-2.) The Companies gave the Group an overview of the ten programs that were analyzed for inclusion in the Program Plan. The eight enhancements and new programs presented herein are a result of the combined effort of the Companies and the Group.

The third opportunity for the Companies to communicate with representatives of various customer groups came in November and December of 2010. During this time, the Companies met individually with low-income advocacy groups, community action councils, the Kentucky Department for Energy Development and Independence, the Kentucky School Board Association, the Attorney General, and the Energy Efficiency Advisory Group. (The sign in sheet for this event as well as meeting minutes can be located in Volume III, Exhibit G-3.)

As the Companies worked to develop this Program Plan that would further increase program participation opportunities for customers and support the Companies in meeting its 2008 IRP cumulative demand reductions, it was recognized that the bill impact for the residential customer segment would grow. During the meetings with the Energy Efficiency Advisory group, it was asked that the Companies explore opportunities to reduce the customer bill impact while keeping the breadth of the proposed Program Plan.

The Companies analyzed the Residential and Commercial Load Management /Demand Conservation Program as this program aligns with the capitalization structure of a traditional generation asset. By capitalizing this program the bill impact to the customer is reduced while keeping the proposed programs for customers.

In sum, the Companies developed the Program Plan by considering feedback and recommendations from the Energy Efficiency Advisory Group, other constituent groups, the National Action Plan for Energy Efficiency, program evaluations from current DSM/EE participants and third party consultants such as ICF International and Navigant Consulting.

ES.2 History

LG&E began negotiations with interveners in 1992 regarding the implementation of DSM/EE programs for the benefit of its customers, and the recovery of the costs associated with such programs. This collaborative effort, known as the DSM Collaborative resulted in a request to the Commission in November 1993 to approve “The Joint Application for the Approval of Demand-Side Management Programs, a DSM Cost Recovery Mechanism, and a Continuing Collaborative Process on DSM for Louisville Gas and Electric Company” (Case No. 93-150). Initial DSM/EE programs were implemented in 1994.

In December 1995, the DSM Collaborative submitted a filing proposing to begin new DSM/EE programs and to continue the existing programs. The Commission approved the filing in June 1996. The approved programs included initial research and development for the Residential Load Management Program and the Program Development and Administration, which was developed to capture the cost of developing and administering the complete set of DSM/EE programs.

In 1997, the DSM Collaborative submitted several filings that resulted in all the programs previously approved being proposed again to the Commission along with the addition of the Residential Energy Audit Program. The Commission approved this filing in April 1998.

In May 2001, the Companies received approval for the modification and continuation of DSM/EE programs and cost recovery mechanisms. In 2008 the Commission approved the Companies' latest filing. That filing demonstrated the Companies' objective to develop, implement, and promote cost-effective offerings that advance the effective and deliberate use of energy by end-use customers. The intention is to provide customers with the tools they need to help make better use of the energy the Companies provide.

ES.3 Energy Efficiency Goals and Objectives

Energy efficiency is a resource. The goal of customer energy efficiency is to offer programs to reduce the amount of energy customers use, assist them to use energy more wisely, and improve their load factor. These programs serve to delay the need for the Companies to build electric generation, purchase additional energy in the wholesale market, and to reduce the impact on customers of possible state or federal greenhouse-gas legislation. The goals of the Companies' energy-efficiency approach are to:

1. Provide customers the tools they need to take control of their own energy use;
2. Educate customers about the tools provided and about the importance of using energy wisely;
3. Educate customers to recognize energy efficiency as a high-priority energy resource;
4. Make a strong, sustainable, and long-term commitment to implement cost-effective energy efficiency;
5. Communicate broadly the benefits of, and opportunities for, energy efficiency while encouraging customers to accept responsibility for their consumption levels;
6. Promote energy efficiency programs to customers in a manner that optimizes participation;
7. Ensure a balanced approach to meeting the anticipated resource needs for LG&E and KU customers;
8. Enhance overall customer experience;
9. Collaborate with stakeholders (i.e. customers, federal and state officials, industry experts, and utility associations) on energy efficiency matters;
10. Be consistent with the National Action Plan for Energy Efficiency, the Kentucky Comprehensive Energy Strategy, and other applicable energy efficiency action plans; and
11. Evaluate emerging technologies for customer value and implementation.

ES.4 Demand-Side Management Cost Recovery Mechanism (DSMCRM)

The attached tariffs contain separate cost recovery mechanisms for LG&E and KU, yet the proposed energy efficiency programs will be operated as one group of programs available to customers of LG&E and KU. Though the programs will appear to be unified from a customer's perspective, separate accounting will allow for the proper recovery of the DSMCRM components from each utility's individual customers within the appropriate rate classes.

The current DSM Cost Recovery Mechanism does not account for any Company-owned capital assets to be used in advancement of energy efficiency throughout the service territory. The Companies now propose to add a fifth element to the DSMCRM to account for the capital expenditure needed to develop the Residential and Commercial Load Management / Demand Conservation Program included in the Demand-Side Management and Energy Efficiency Program Plan. The proposed added element, to be defined as the DSM Rate of Return (DRR), would allow the Companies to earn an approved return on equity exclusively for the capital expenditures outlined within that program. The Companies propose a 10.50% return on equity for capital invested for this program, which is the midpoint of the range of returns on equity that is stipulated as reasonable in the Companies' most recent rate cases.⁷ It is also well within the range of returns on equity the Commission found reasonable in the Companies' most recent base rate cases,⁸ and other data support its reasonableness (as discussed in the testimony of Lonnie E. Bellar that accompanies this plan filing).

Concerning the amounts to be recovered through the DSMCRM, the attached tariffs assume an effective date of April 13, 2011. Because the Commission's final order in this matter will certainly come after that date, the Companies seek cost recovery in 2011 prorated to the date of the Commission's final order, and request that the tariff sheets associated with the Plan be effective six weeks after the date of the Commission's final order.

The Demand-Side Management Balancing Adjustment (DBA) is used to reconcile the difference between what was actually billed and what should have been billed for approved energy efficiency programs. The DBA adjustments will become effective each April for the purpose of reconciling DBA revenues collected in the previous calendar year.

⁷ *In the Matter of Application of Kentucky Utilities Company for an Adjustment of Base Rates*, Case No. 2009-00548, Order at 34 and Appx. A at 4 (July 30, 2010); *In the Matter of Application of Louisville Gas and Electric Company for an Adjustment of Electric and Gas Base Rates*, Case No. 2009-00549, Order at 37 and Appx. A at 4 (July 30, 2010).

⁸ *In the Matter of Application of Kentucky Utilities Company for an Adjustment of Base Rates*, Case No. 2009-00548, Order at 31 (July 30, 2010) ("After weighing all the evidence of record, the Commission finds that KU's required ROE for electric operations falls within a range of 9.75 to 10.75 percent with a midpoint of 10.25 percent."); *In the Matter of Application of Louisville Gas and Electric Company for an Adjustment of Electric and Gas Base Rates*, Case No. 2009-00549, Order at 33 (July 30, 2010) ("After weighing all the evidence of record, the Commission finds that LG&E's required ROE for both electric and gas operations falls within a range of 9.75 to 10.75 percent with a midpoint of 10.25 percent.").

ES.5 Program Evaluation

LG&E and KU recognize the tremendous importance of program evaluation, measurement, and verification (EM&V). The Companies currently use an EM&V model that examines each program as it relates to program design, delivery, impacts, and return on investment. The EM&V process ensures the quality and effectiveness of the programs, optimal use of resources, and responsiveness to customers' needs. The Companies typically perform program evaluation in two phases, process evaluation and impact evaluation. Process evaluation is a systematic assessment of an energy efficiency program for the purposes of improving its design, delivery, and perceived quality and usefulness to customers. Impact evaluation focuses on quantifying the energy and demand savings and other economic benefits of the program. The goal of the EM&V process is the continual improvement of the Companies' DSM/EE programs.

The Companies will use their EM&V model to ensure that all of the programs contained in this filing remain prudent—and continually improving—uses of customers' dollars. If the Companies' reviews revealed any program to be cost-ineffective or otherwise underperforming, the Companies would discontinue the program and notify the Commission by a letter or motion.

ES.6 Program Benefit / Cost Calculations

Listed in ES.6.1 below are the benefit/cost ratios performed according to the California Standard Practice Manual for each of the proposed energy efficiency programs. Each of the proposed programs passes the Participant Test (programs designated "n/a" have no participant costs) and the Total Resource Cost Test.

The benefit/cost calculations for the program plan were performed using DSMore, a PC-based software package developed by Integral Analytics, Inc. This software has replaced DS Manager, which was used to provide the benefit/cost calculations in prior expansion filings. DSMore provides more robust analytics surrounding weather and market conditions and a more transparent platform to understand the underlying calculations associated with the benefit/cost tests.⁹ The DSMore input summary report for the programs are in Volume II, Exhibit B, and the output reports are in Volume II, Exhibit C.

⁹ Additional market condition analytics considered in this filing include but are not limited to: geographic boundary market power prices; and average electric / gas pricing within those geographic boundaries.

ES.6.1 Benefit / Cost Ratios for California Standards Tests

The Companies believe that the set of four cost-benefit tests the Commission currently employs, i.e., the set contained in the California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects (“Manual”), represents the best collection of tests for determining the cost-effectiveness of potential DSM/EE programs.¹⁰ These tests and their Manual definitions are:

- **The Participant Test:** The Participant Test is the measure of the quantifiable benefits and costs to the customer due to participation in a program. Since many customers do not base their decision to participate in a program entirely on quantifiable variables, this test cannot be a complete measure of the benefits and costs of a program to a customer.¹¹
- **The Ratepayer Impact Measurement Test:** The Ratepayer Impact Measure (RIM) test measures what happens to customer bills or rates due to changes in utility revenues and operating costs caused by the program. Rates will go down if the change in revenues from the program is greater than the change in utility costs. Conversely, rates or bills will go up if revenues collected after program implementation is less than the total costs incurred by the utility in implementing the program. This test indicates the direction and magnitude of the expected change in customer bills or rate levels.¹²
- **The Total Resource Cost Test:** The Total Resource Cost Test measures the net costs of a demand-side management program as a resource option based on the total costs of the program, including both the participants’ and the utility’s costs. This test represents the combination of the effects of a program on both the customers participating and those not participating in a program. In a sense, it is the summation of the benefit and cost terms in the Participant and the Ratepayer Impact Measure tests, where the revenue (bill) change and the incentive terms intuitively cancel (except for the differences in net and gross savings).¹³
- **The Program Administrator Cost Test (or “Utility Cost Test”):** The Program Administrator Cost Test measures the net costs of a demand-side management program as a resource option based on the costs incurred by the program administrator (including incentive costs) and excluding any net costs incurred by the participant. The benefits are similar to the TRC [Total Resource Cost] benefits. Costs are defined more narrowly.¹⁴

The Commission has not expressed a preference for one test over another, and has approved programs for the Companies that pass certain tests but do not pass others (“passing” is a value over 1.0). The Companies, however, have historically placed additional weight on the Total Resource Cost and Participant Tests. The Total Resource Cost Test is particularly important because it is the most comprehensive indicator of whether a potential DSM/EE program will create net benefits for customers and the utilities. The Companies have also placed special emphasis on the Participant Test because of the voluntary nature of DSM/EE programs in Kentucky; if a potential DSM/EE program will not benefit its participants, it is unlikely to have many participants and would likely be a waste of resources. For these reasons, the Companies recommend that the Commission consider

¹⁰ The Manual is available online at: http://www.energy.ca.gov/greenbuilding/documents/background/07-J_CPUC_STANDARD_PRACTICE_MANUAL.PDF

¹¹ Manual at 8.

¹² Manual at 13.

¹³ Manual at 18.

¹⁴ Manual at 23.

all four of the Manual’s tests, but that it place special emphasis on the Total Resource Cost and Participant Tests.

The Companies performed the four traditional DSM/EE benefit-cost tests for each of the proposed new programs and modification to existing programs, which show that each passed the Participant and Total Resource Cost tests.

For analysis purposes of this program plan, the existing programs were assessed with an evaluated program period for the remaining years 2011-2014, while the new and revised programs were assessed with an evaluated program period of seven years.

Status	Program	DSMore Scoring			
		Participant Test	Utility Cost Test	Ratepayer Impact Test	Total Resource Cost Test
Existing	Residential High Efficiency Lighting	8.50	3.32	0.47	2.26
	Residential New Construction	2.45	2.73	0.77	1.52
	Residential HVAC Tune Up	8.28	1.44	0.66	1.26
	Commercial HVAC Tune Up	23.45	3.40	0.77	2.96
	Customer Education & Public Information	NA	0.00	0.00	0.00
	Dealer Referral Network	NA	0.00	0.00	0.00
	Residential Responsive Pricing (RRP)	NA	0.00	0.00	0.00
Revised	Program Development & Administration	NA	0.00	0.00	0.00
	Residential Conservation (HEPP)	5.69	1.85	0.55	1.42
	Residential Load Management	NA	1.93	1.35	3.62
	Commercial Load Management	NA	2.53	1.76	3.96
	Residential Low Income Weatherization	NA	2.08	0.60	2.08
	Commercial Conservation/Rebates	7.03	16.40	1.00	6.15
New	Smart Energy Profile	NA	2.36	0.60	2.36
	Residential Refrigerator Removal	NA	1.53	0.44	1.84
	Residential Incentives	3.28	4.50	0.80	2.31
Overall Portfolio (Existing, Revised, & New)		8.24	3.39	0.82	3.01

ES.7 Timeline

Implementation of this overall program plan will require significant time, the employment of additional personnel, significant procurement and contract work, and the development of marketing and communications plans to encourage customers to participate in the new and enhanced programs. However, to support the development of this application, the Companies have consulted with various third party vendors to ensure that the energy and demand budgets as well as the financial budgets are reasonable for program operations.

While this case is pending with the Commission, the Companies intend to move forward with the Request for Proposal process to seek qualified contractors and consultants for the programs. The Companies intend to enter into contracts with the successful bidders that are contingent upon Commission approval of the respective programs and corresponding cost recovery. The Companies will seek to implement all approved programs as quickly as reasonably possible following approval. All new programs and enhancements to existing programs will utilize a “phased approach” to

implementation to allow for optimum program execution and program adjustment, leading to high-quality service delivery.

ES.8 Energy and Demand Reductions

To support the development of the energy and demand reductions for the proposed programs, the Companies consulted with third-party vendors to ensure the validity of the proposed energy and demand reduction budgets. The series of tables below illustrate the projected and cumulative annual energy and demand savings for the programs contained in this filing.

Incremental	Projected Energy Savings for Energy Efficiency Programs (Revised and New)							
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
MWH	103,750	141,593	150,208	199,702	200,212	201,308	202,405	1,199,179
MW	40	51	51	60	58	58	58	287
CCF	752,802	1,476,910	1,563,109	2,441,088	2,492,232	2,578,028	2,663,824	13,967,993

Incremental	Projected Energy Savings for Energy Efficiency Programs (Existing, Revised, and New)							
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
MWH	174,211	191,740	196,939	243,769	200,212	201,308	202,405	1,410,584
MW	49	56	55	64	58	58	58	309
CCF	831,834	1,549,330	1,646,392	2,536,864	2,492,232	2,578,028	2,663,824	14,298,503

Cumulative	Projected Energy Savings for Energy Efficiency Programs (Existing, Revised, and New)						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
MWH	174,211	365,951	562,890	806,659	1,006,871	1,208,179	1,410,584
MW	49	99	143	196	234	271	309
CCF	831,834	2,381,163	4,027,556	6,564,420	9,056,652	11,634,680	14,298,503

The total demand savings figure (MW) is not a simple total over the seven-year period due to the non-cumulative effect of the Smart Energy Profile Program. Its demand savings are for one year only, thus, the 287 MW total (for the Revised and New Programs) and the 309 MW total (for Existing, Revised, and New Programs) is the adjusted savings over the seven-year period where only the final year of demand savings from the Smart Energy Profile is counted.

Demand reductions achieved by the current portfolio of DSM/EE programs through the end of 2010 is 182 MW, making the total through year seven of the Program Plan equal to 491 MW and placing the Companies on target to meet their 2008 IRP cumulative demand reduction of 539 MW.¹⁵

¹⁵ This total includes the Responsive Pilot Expansion assumptions within the IRP.

ES.9 Program Budget

The Companies consulted with third-party vendors to support the development and validity of the operational budgets for the proposed programs. The following budget projections give an overview of the proposed budget by expense type, program, and rate class.

E.S.9.1 Annual Budget by Program

Status	Program (\$000s)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Existing	Residential High Efficiency Lighting	\$4,610	\$3,447	\$3,490	\$3,543				\$13,090
	Residential New Construction	\$1,384	\$1,204	\$1,281	\$1,402				\$5,271
	Residential HVAC Tune Up	\$533	\$453	\$492	\$538				\$2,046
	Commercial HVAC Tune Up	\$505	\$455	\$497	\$512				\$1,939
	Customer Education & Public Information	\$3,541	\$3,445	\$3,632	\$3,866				\$14,484
	Dealer Referral Network	\$213	\$156	\$159	\$163				\$692
	Residential Responsive Pricing (RRP)	\$125							\$125
Revised	Program Development & Administration	\$1,260	\$1,297	\$1,335	\$1,373	\$1,421	\$1,471	\$1,522	\$9,680
	Residential Conservation (HEEP)	\$1,461	\$1,843	\$2,207	\$2,255	\$2,250	\$2,289	\$2,361	\$14,666
	Residential Low Income Weatherization	\$2,368	\$3,001	\$3,957	\$4,947	\$5,887	\$6,862	\$7,843	\$34,865
	Residential Load Management	\$5,648	\$11,996	\$11,823	\$13,821	\$13,601	\$14,040	\$14,545	\$88,474
	Commercial Load Management	\$450	\$548	\$571	\$647	\$606	\$625	\$647	\$4,095
	Commercial Conservation Rebates	\$3,255	\$3,267	\$3,316	\$3,339	\$3,369	\$3,400	\$3,431	\$23,377
New	Smart Energy Profile	\$1,371	\$2,277	\$2,241	\$3,311	\$3,344	\$3,433	\$3,468	\$19,443
	Residential Refrigerator Removal	\$816	\$1,586	\$1,956	\$2,057	\$2,068	\$2,150	\$2,211	\$12,825
	Residential Incentives	\$1,567	\$1,946	\$2,646	\$2,683	\$2,661	\$2,669	\$2,707	\$16,780

Budget (Existing, Revised, & New)	\$32,109	\$36,850	\$39,572	\$44,438	\$35,209	\$36,939	\$38,736	\$263,852
Total Residential (Existing, Revised, & New)	\$27,208	\$33,457	\$34,051	\$38,721	\$30,523	\$32,178	\$33,896	\$228,033
Total Commercial (Existing, Revised, & New)	\$4,902	\$3,394	\$5,521	\$5,717	\$4,686	\$4,761	\$4,839	\$35,819

Residential and Commercial Load Management (\$000s)								
Capital Expenditures	\$3,208	\$4,469	\$4,071	\$4,151	\$3,681	\$3,753	\$3,827	\$27,159
O&M Expenditures	\$5,890	\$8,075	\$8,323	\$10,318	\$10,526	\$10,913	\$11,366	\$66,410

**LG&E and KU
DEMAND-SIDE MANAGEMENT AND
ENERGY EFFICIENCY PROGRAM PLAN**

**ENHANCEMENTS TO EXISTING DSM / EE
PROGRAM PLAN**

**LG&E AND KU
DEMAND-SIDE MANAGEMENT AND
ENERGY EFFICIENCY PROGRAM PLAN**

**1.0 Residential and Commercial Load Management /
Demand Conservation**

**LG&E AND KU
DEMAND-SIDE MANAGEMENT AND
ENERGY EFFICIENCY PROGRAM PLAN**

**Program Name: Residential and Commercial Load Management /
Demand Conservation**

1.1 Program Overview

The existing Demand Conservation Program is voluntary and has been operational since 2001. Demand Conservation employs switches in homes and small businesses to help reduce the demand for electricity during peak times. The program currently uses one-way paging signals to communicate with the switches to cycle central air conditioning units, heat pumps, electric water heaters, and pool pumps off and on through a predetermined sequence. If an air conditioner is cycled off for thirty minutes in a one hour period, it is considered a 50% control strategy. The strategy has been to control between 30% and 45% depending on temperature and customer equipment.

The Demand Conservation Program has experienced success in program enrollment since its inception; however, over the nine years of program development the Companies have reached a market saturation rate of approximately 20%. Based on third-party information, this saturation rate and magnitude of demand is considered to be very successful. But the Companies recognize the potential for growth is still significant, and the goal is to reach approximately 33% saturation over the plan period. To address the market saturation goals the Companies are seeking approval for the following proposed program enhancements: (1) the addition of another full time equivalent (FTE) to assist in outreach efforts to the multi-family and commercial customer segment; (2) the ability to modify and increase the financial incentives to attract those customers who have not been interested in this voluntary customer program; (3) to capitalize newly installed load-control switches and programmable thermostats; and (4) to extend the current Residential and Commercial Load Management / Demand Conservation Program through year seven of the proposed Program Plan.

1.2 Rationale for Request

The Demand Conservation Program has proven to be an economical means of reducing load at peak times and delay construction of generation assets. The program targets peak demand and is utilized during summer periods only because LG&E and KU collectively are summer peaking. This ability to curtail load has also proven to be beneficial in responding to emergency situations, such as a forced outage of a generating unit.

Demand savings are estimated to be approximately 1 kW per air conditioner device and approximately 0.4 kW per water heater switch. A thermostat option provides a demand savings of approximately 1 kW, but is not expected to be available until midway through year one, upon approval of the filing. In December 2009, the Companies became aware of a technology-related risk concerning the programmable thermostats used with the Demand Conservation Program. The

issue affected approximately 12,500 customers and accounted for approximately 14 MW of controllable demand. In addition to the reduction of existing demand reduction capabilities, additional 12,200 thermostats were planned to be installed during 2010. While efforts to remove the questionable thermostats progressed, a concerted marketing campaign and discussions with the installation vendor allowed the Companies to switch focus and install over 21,000 controllable AC switches compared to the planned 6,600. This shift in technology and emphasis created a net increase of 9 MW of controllable demand.

In addition to the thermostat issue above, the Demand Conservation Program has reached a market saturation rate of approximately 30% where paging technology is available, which has caused lower customer participation under the current incentive structure. The proliferation of cellular phones and wireless technology has caused traditional analog paging companies to reduce or eliminate operations. The Companies are currently studying communications strategies for all customers and intends to implement solutions that will allow all customers to participate, and look to increase the customer incentive amounts to reach the filed customer participation levels.

1.3 Program Audience

This program will be available to residential and commercial customers only. Some customers will not have access to the program due to their location within the service territory where the paging communications are not reliable.¹⁶ The Companies continue to explore cost-effective ways to expand paging technology in those parts of the state and also continue to look at additional technologies that could make the program viable in those areas.

1.4 Program Benefits

Demand Conservation Program success will provide economic and environmental benefits through the delay of constructing generation assets. Increasing the number of thermostats installed will produce demand and energy savings. The customer will benefit by reduced demand during the highest load periods and also save throughout the year if educated on the benefits of the thermostat.

1.5 Participation Goals

Air conditioner participation goals for years one through four are designed to be approximately the same total as approved in Case No. 2007-00319 with only slight year-to-year differences. The redesign calls for 1,190 more air conditioner switch/thermostats than the original program design for years one through four, and an additional 31,200 installations for years five through seven.

Water heater and pool pump switch installations for years one through four were reduced based on prior customer participation. The redesign calls for 7,000 fewer water heater and pool pump switches than

¹⁶ Currently the lack of paging technology impacts 75,000 customers in the Kentucky Utilities service territory.

the original program design for years one through four. Most of the deficit is accounted for in years five through seven since the redesigned goal is 5,250 installations for years five through seven.

The Companies will continue to target an equal participation split among LG&E and KU customers. The Companies propose to revise the currently approved device installation goals according to the tables below:

1.5.1 Residential Participation Goals

Annual Installations	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Thermostat	4,550	9,100	7,800	7,800	6,500	6,500	6,500	48,750
Switch - AC	4,900	4,900	4,200	4,200	3,500	3,500	3,500	28,700
Switch - Water Heat	2,450	2,450	2,100	2,100	1,750	1,750	1,750	14,350
Total	11,900	16,450	14,100	14,100	11,750	11,750	11,750	91,800

Cumulative Installations	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Thermostat	4,550	13,650	21,450	29,250	35,750	42,250	48,750
Switch - AC	4,900	9,800	14,000	18,200	21,700	25,200	28,700
Switch - Water Heat	2,450	4,900	7,000	9,100	10,850	12,600	14,350
Total	11,900	28,350	42,450	56,550	68,300	80,050	91,800

1.5.2 Commercial Participation Goals

Annual Installations	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Thermostat	260	390	390	390	260	260	260	2,210
Switch - AC	280	210	210	210	140	140	140	1,330
Switch - Water Heat	-	-	-	-	-	-	-	-
Total	540	600	600	600	400	400	400	3,540

Cumulative Installations	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Thermostat	260	650	1,040	1,430	1,690	1,950	2,210
Switch - AC	280	490	700	910	1,050	1,190	1,330
Switch - Water Heat	-	-	-	-	-	-	-
Total	540	1,140	1,740	2,340	2,740	3,140	3,540

1.6 Energy and Demand Impacts

The Demand Conservation Program is able to reduce overall energy usage by targeting peak demand. Load is generally curtailed during the summer months by device cycling, as the Companies are traditionally summer peaking utilities.

1.6.1 Residential Annual and Cumulative Energy Impacts

Annual Reductions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Energy MWh	1,868	3,735	3,202	3,202	2,668	2,668	2,668	20,009
Demand MW	10.3	14.3	12.3	12.3	10.2	10.2	10.2	79.9
Gas CCF	110,258	220,516	189,014	189,014	157,511	157,511	157,511	1,181,334

Cumulative Reductions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Energy MWh	1,868	5,603	8,804	12,006	14,674	17,342	20,009
Demand MW	10.3	24.6	36.9	49.2	59.4	69.7	79.9
Gas CCF	110,258	330,774	519,787	708,801	866,312	1,023,823	1,181,334

Annual Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Energy	MWh	1,868	3,735	3,202	3,202	2,668	2,668	2,668	20,009
Demand	MW	10.3	14.3	12.3	12.3	10.2	10.2	10.2	79.9
Gas	CCF	110,258	220,516	189,014	189,014	157,511	157,511	157,511	1,181,334

Cumulative Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Energy	MWh	1,868	5,603	8,804	12,006	14,674	17,342	20,009	
Demand	MW	10.3	24.6	36.9	49.2	59.4	69.7	79.9	
Gas	CCF	110,258	330,774	519,787	708,801	866,312	1,023,823	1,181,334	

1.6.2 Commercial Annual and Cumulative Energy Impacts

Annual Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Energy	MWh	107	160	160	160	107	107	107	907
Demand	MW	0.8	0.9	0.9	0.9	0.6	0.6	0.6	5.2
Gas	CCF	6,300	9,451	9,451	9,451	6,300	6,300	6,300	53,554

Cumulative Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Energy	MWh	107	267	427	587	694	800	907	
Demand	MW	0.8	1.7	2.5	3.4	4.0	4.6	5.2	
Gas	CCF	6,300	15,751	25,202	34,652	40,953	47,253	53,554	

1.7 Customer Incentives

All residential electric customers and commercial electric customers of LG&E or KU with qualifying central air conditioning equipment and who reside where paging technologies are available are eligible to participate in the Load Management/Demand Conservation Program. In conjunction with a central air conditioning system or heat pump, customers with electric water heaters or pool pumps will also be eligible.

In previous DSM/EE program filings prepared by the Companies, the incentives for the Load Management/Demand Conservation Program were specifically prescribed and approved. The Companies now seek increased autonomy to modify these incentives to include both monetary and non-monetary mechanisms with a value range beginning at \$20 per year, increasing to a maximum benefit of \$40 per year. This incentive will be in addition to any applicable installation bonus that customers may receive for enrolling in the program. The incentive parameters being proposed are a monetary incentive of a bill credit or non-monetary incentives that include but are not limited to: iTunes cards, Wal-Mart gift certificates, or prepaid VISA cards upon approval by the Commission. All modifications to the program incentives will be designed to increase customer enrollment throughout the future life of the program. As evidenced by data provided by Navigant Consulting, formally Summit Blue Consulting (Volume IV, Exhibit I), there is a distinct correlation between the level of financial incentive and the amount of customer participation. The various incentives and marketing strategies used to engage the customer will be analyzed for effectiveness on a regular basis, and changes will be made as needed. Year-to-year budgets will be developed based upon the level of incentives within the general guidelines and overall budgets as presented. The Companies will develop a plan based on the level of incentives provided and any remaining funds will be returned to the customer via the annual DSM/EE balancing adjustment.

The Load Management/Demand Conservation Program consists of three customer groups. The following incentive structures are proposed for each group:

(1) Switch Option – A residential customer with central air conditioning or a heat pump will receive an incentive for each air conditioning unit/heat pump participating in the switch option. Commercial customers will receive the same incentive as residential for air conditioning units up to 5 tons and a larger amount for larger units. Those air conditioning or heat pump customers with a qualifying water heater or pool pump will receive additional incentives to participate.

(2) Programmable Thermostat Option – Customers choosing the Programmable thermostat option will not receive an annual credit for air conditioning units/heat pumps controlled, but will receive incentives for eligible electric water heaters and pool pumps. Due to the LG&E/KU thermostat recall in early 2010, thermostats are not currently offered but are expected to be available again in midway through year one, upon approval of the program plan.

(3) Multi-family Option – Multi-family units will be eligible for either a switch or a programmable thermostat option. The Companies have had great success in working with property owners and managers to enroll entire complexes. Any monetary incentive will be split between the property owner and the tenant.

1.8 Implementation Plan

This program proposes to continue to install load control switches and load control programmable thermostats on central air conditioners of an additional 91,800 residential and 3,540 commercial air conditioners between years one through seven of the program plan. By the end of year seven, the total program installation for the Demand Conservation program should be approximately 220,000 devices.

In some areas where paging communications are not reliably available, new equipment and technology will be deployed that will enable the customers to receive the load control communications. The Companies are currently studying communications strategies for all customers and intends to implement solutions that will provide participation opportunities of all customers, and look to increase the customer incentive amounts to reach the filed customer participation levels.

1.9 Annual Program Budget

Annual program budgetary information for both the residential and commercial components of the Demand Conservation Program can be found in the tables below. Projected program costs as presented in the 2007 DSM/EE filing have also been included below, as a means for comparison with the costs of the redesigned program. As referenced in the filing application, the Companies propose to add a fifth element to the DSM Cost Recovery Mechanism to be used to account for the inclusion of the capital expenditure needed to further develop the Demand Conservation Program. The proposed element, to be defined as the DSM Rate of Return (DRR), would allow the Companies' to earn an approved rate of return on equity for the capital expenditures outlined within the Demand Conservation Program.

1.9.1 Residential Annual Program Budget

Program Costs \$000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Administration	\$947	\$1,180	\$1,100	\$1,128	\$1,042	\$1,069	\$1,097	\$7,564
Implementation	\$2,978	\$4,212	\$3,810	\$3,886	\$3,458	\$3,527	\$3,597	\$25,468
Incentives	\$3,160	\$4,881	\$5,044	\$6,786	\$6,942	\$7,110	\$7,337	\$41,262
Miscellaneous	\$1,562	\$1,722	\$1,869	\$2,021	\$2,159	\$2,333	\$2,513	\$14,180
Total Program Expenses	\$8,648	\$11,996	\$11,823	\$13,821	\$13,601	\$14,040	\$14,545	\$88,474
Capital Expenditures	\$296	\$679	\$986	\$1,268	\$1,477	\$1,667	\$1,836	\$8,209
O&M Expenditures	\$5,891	\$8,415	\$9,015	\$11,316	\$11,861	\$12,575	\$13,360	\$72,433

Program Cost Comparison to 2007 DSM Filing \$000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Program Redesign	\$6,187	\$9,094	\$10,001	\$12,584	\$13,339	\$14,242	\$15,196
Original Program	\$9,782	\$10,241	\$9,091	\$8,662			
Difference	(\$3,595)	(\$1,147)	\$910	\$3,922			

**Year 1-4 cost for the Original Program represent years 2011-2014 from the 2007 DSM Filing.

1.9.2 Commercial Annual Program Budget

Program Costs \$000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Administration	\$101	\$107	\$111	\$114	\$108	\$111	\$115	\$767
Implementation	\$159	\$187	\$190	\$194	\$152	\$155	\$159	\$1,197
Incentives	\$114	\$173	\$182	\$245	\$247	\$252	\$260	\$1,472
Miscellaneous	\$75	\$81	\$88	\$94	\$99	\$107	\$114	\$659
Total Program Expenses	\$450	\$548	\$571	\$647	\$606	\$625	\$647	\$4,095
Capital Expenditures	\$15	\$32	\$47	\$61	\$69	\$77	\$84	\$386
O&M Expenditures	\$306	\$394	\$431	\$523	\$538	\$569	\$603	\$3,366

Program Cost Comparison to 2007 DSM Filing \$000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Program Redesign	\$322	\$426	\$479	\$584	\$608	\$646	\$687
Original Program	\$439	\$431	\$448	\$432			
Difference	(\$117)	(\$5)	\$31	\$152			

**Year 1-4 cost for the Original Program represent years 2011-2014 from the 2007 DSM Filing.

Program Budgetary Assumptions

- Program labor has increased to include an additional Program Manager. There are now 2.5 Program Managers in the program budget. The Program Managers are split between the residential and commercial programs (2.1 residential and 0.4 commercial). The program historically has been approximately 85% of demand savings and over 50% of total DSM/EE expenditures. Based on several years of program operation, the Companies have determined they will need additional staff to meet program goals.
- The thermostat demand savings used in the analysis of the program allows for single family residence and multi-family residence installations.
- Quality assurance is budgeted to check 10% of all installed devices on an annual basis.

**LG&E AND KU
DEMAND-SIDE MANAGEMENT AND
ENERGY EFFICIENCY PROGRAM PLAN**

**2.0 Commercial Conservation (Energy Audits) /
Commercial Incentives**

**LG&E AND KU
DEMAND-SIDE MANAGEMENT AND
ENERGY EFFICIENCY PROGRAM PLAN**

**Program Name: Commercial Conservation (Energy Audits) /
Commercial Incentives**

2.1 Program Overview

The Commercial Conservation and Commercial Incentives Program is designed to provide energy efficiency opportunities for the Companies' commercial customers through energy audits and to increase the implementation of energy efficiency measures identified through the audits by providing financial incentives to assist with replacing aging and less-efficient equipment. The Commercial Conservation component of the program has been successful in achieving targets established in the 2007 Plan. The recent economic downturn has largely required many businesses to take a survival approach and thus the Commercial Incentives component has struggled to meet targets established in the 2007 Plan. In addition, customer feedback necessitates a custom rebate option to allow for additional opportunity to capture savings beyond the prescriptive equipment list originally developed. This proposed filing enhancement is responsive to the growing rate of requests for inclusion of other applications and needs of the commercial customer segment. The Companies seek to enhance this program in several ways: (1) the Companies seek to add to the energy efficiency retrofits eligible for incentives to include Refrigeration; (2) the Companies seek to add Commercial Customized Incentives to encourage sustained energy efficient retrofits for customers which are not covered by the existing Commercial Conservation/Incentive Program (i.e., equipment not specified in the current program literature). Incentives available to all customers in this program's rate classes will be developed based upon a \$100 per kW for calculated efficiency improvements; and (3) the Companies seek to extend the current Commercial Conservation component of the program through year seven of the proposed program plan.

2.2 Rationale for Request

The program is designed to reduce demand and usage of energy by assisting commercial customers via financial incentives for installation of energy efficient equipment within their businesses. The ultimate success of the program comes from customers' implementation of sustainable energy savings measures. The program is designed to allow for a maximum benefit per facility per year. Commercial Customized Incentives will promote energy efficient technologies in the commercial sector that are not addressed in the existing Commercial Conservation/Incentive Program. Providing incentives will entice customers to make a more energy conscious decision when installing new equipment.

2.3 Program Audience

This program will be available to commercial customers only. The incentives will be available to those customers who are replacing existing electrical equipment with more energy efficient equipment.

2.4 Program Benefits

The existing program covers lighting, motors, pumps, variable frequency drives and air conditioning. The list for each group is prescriptive which can limit a customer's ability to participate or install their desired application. The addition of Customized Incentives will incent customers to implement sustained energy efficient technologies not currently covered in the existing Commercial Conservation/Incentive Program.

Reduced energy utilization can provide benefits to the environment from reduced generation requirements and will assist with the reduction of the commercial customer's operating expenses. The program will promote energy efficiency and provide incentives for making sustainable and measurable energy efficiency improvements.

2.5 Participation Goals

Yearly participation goals have been extended for the Commercial Conservation/Incentive Program to the year seven of the proposed program plan. The annual Commercial Conservation Audit participant goal is 880 through year seven. Funding levels for Commercial Incentives will be maintained at the same level as identified in Case No. 2007-00319.

2.5.1 Participation Goals

Participants	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
LG&E	440	440	440	440	440	440	440	3,080
KU	440	440	440	440	440	440	440	3,080
Total	880	880	880	880	880	880	880	6,160

Participants	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
LG&E	440	440	440	440	440	440	440	3,080
KU	440	440	440	440	440	440	440	3,080
Total	880	880	880	880	880	880	880	6,160

2.6 Energy and Demand Impacts

The Commercial Conservation/Incentives Program is designed to reduce energy demand by assisting commercial customers via financial incentives to install energy efficient equipment within their businesses. The program is designed to allow for a maximum benefit per facility per year. The proposed enhancements to the incentives offered will assist in promoting energy-efficient technologies in the commercial sector that are not addressed in the existing Commercial

Conservation/Incentive Program. Due to the large energy usage associated with this sector, the potential for increased efficiency and energy savings is significant. Projected annual and cumulative reductions for program can be found in the tables below.

2.6.1 Annual and Cumulative Energy Impacts

Energy and demand savings associated with the Commercial Conservation/Incentives Program are unchanged from the 2007 Filing.

Annual Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Energy	MWh	54,988	54,988	54,988	54,988	54,988	54,988	54,988	384,916
Demand	MW	20.7	20.7	20.7	20.7	20.7	20.7	20.7	144.8
Gas	CCF	(152,882)	(152,882)	(152,882)	(152,882)	(152,882)	(152,882)	(152,882)	(1,070,172)

Cumulative Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Energy	MWh	54,988	109,976	164,964	219,952	274,940	329,928	384,916
Demand	MW	20.7	41.4	62.1	82.8	103.4	124.1	144.8
Gas	CCF	(152,882)	(305,763)	(458,645)	(611,527)	(764,409)	(917,290)	(1,070,172)

2.7 Customer Incentives

The incentive portion of the program will provide a financial incentive to customers to install sustainable energy efficient equipment. Incentives available to all customers in this program’s target rate classes will be developed based upon a \$100 per kW for calculated efficiency improvements. To ensure equal incentive opportunities for all commercial customers, the maximum annual incentive permitted will be \$50,000 per facility.¹⁷ However, the Companies will permit commercial customers to receive multi-year incentives in a single year where such multi-year incentives do not exceed the aggregate amount of \$100,000 per facility and no incentive was provided in the immediately preceding year.

2.8 Implementation Plan

Program oversight is the responsibility of the Companies. The major responsibilities are: promote the program within the LG&E and KU service territory; monitor quality assurance; ensure contractor payment; oversee the program database; process customer applications; and pull usage for the field contractors. The Companies will make final decisions on the contractors, performance and all program expenditures. Program oversight is provided through invoicing and production reporting from the audit contractor, retaining customer documentation of incentivized measure information as well as an evaluation report prepared by the outside evaluation contractor.

The audit contractor receives enrolled customers, performs audits, and provides audit reports with recommended energy saving improvements. The audit contractor is responsible for maintaining the

¹⁷ A facility is not defined by the number of meters a customer may have, and any building or property that is owned, operated, leased, licensed, or used by the same customer may constitute a separate facility. As such, where appropriate, one customer might be entitled to more than one rebate.

commercial audit database. The audit contractor submits monthly invoices along with customer audit data and results, as well as supporting information regarding all work performed

2.9 Annual Program Budget

Annual program budgetary information for the Commercial Conservation (Energy Audits)/Commercial Incentives Program can be found in the table below. Projected program costs as presented in the 2007 DSM filing have also been included below, as a means for comparison with the costs of the redesigned program.

2.9.1 Annual Program Budget

Program Costs \$000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Administration	\$300	\$305	\$311	\$317	\$328	\$340	\$352	\$2,254
Implementation	\$923	\$951	\$994	\$1,010	\$1,029	\$1,048	\$1,067	\$7,022
Incentives	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$14,000
Miscellaneous	\$32	\$11	\$11	\$11	\$12	\$12	\$12	\$101
Total	\$3,255	\$3,267	\$3,316	\$3,339	\$3,369	\$3,400	\$3,431	\$23,377

Program Cost Comparison to 2007 DSM Filing \$000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Program Redesign	\$3,255	\$3,267	\$3,316	\$3,339	\$3,369	\$3,400	\$3,431
Original Program	\$3,214	\$3,213	\$3,236	\$3,258			
Difference	\$41	\$54	\$81	\$81			

**Year 1-4 cost for the Original Program represent years 2011-2014 from the 2007 DSM Filing.

Program Budgetary Assumptions

- The Commercial Conservation (Energy Audits) / Commercial Incentives Program redesign utilizes all existing and approved program measures/costs and extends through year seven of the program. The costs are escalated beyond year four (original approved program completion date). The labor escalation rate is 3.5% and all other expenditures escalate at 2%. Incentives are based on the Companies' avoided capacity cost just as the original program was designed.

**LG&E AND KU
DEMAND-SIDE MANAGEMENT AND
ENERGY EFFICIENCY PROGRAM PLAN**

**3.0 Residential Conservation / Home Energy
Performance Program**

LG&E AND KU DEMAND-SIDE MANAGEMENT AND ENERGY EFFICIENCY PROGRAM PLAN

Program Name: Residential Conservation / Home Energy Performance Program

3.1 Program Overview

The Residential Conservation Program/Home Energy Performance Program is designed to help customers reduce energy costs within the home using online or on-site energy audits. The program works with customers to identify specific steps they can take to reduce energy costs, making them better energy managers. The online energy audit component to this program will incorporate reduced targets the first two years to allow for communication and growing customer participation while the on-site audit component will be modified to become a more comprehensive program that includes certified auditors and tiered incentives for residential customers to support the implementation of energy saving measures. The structure of this program will feature auditors certified to national standards. The auditors will use standardized software products similarly endorsed by national ruling bodies such as the Residential Energy Services Network (RESNET), the Building Performance Institute (BPI), and the BESTEST-EX standards committee.

The Home Energy Performance Program will build upon the existing on-site energy audit program. It is designed to continue the installations and energy savings already established by the current program such as a blower-door test; air-sealing measures; installation of high efficiency residential light bulbs; water-saving faucet and shower fixtures as part of the on-site audit. This Tier One audit provides energy savings measures that will provide homeowners up to 10% savings of their annual usage which is consistent with the results of the current program. The subsequent Tier Two and Three Audit Incentives will provide incentives for the residential customer that will encourage the customer to implement more energy saving measures that can provide up to a maximum of 30% savings.

3.2 Rationale for Request

The program as proposed will incentivize customers to maximize energy savings in the current audit structure. This program will incorporate a nationally approved combination of audit procedures and software modeling, with verified metrics for installation costs and associated energy savings. It will encourage the development of a pool of contractors certified by RESNET, BPI or accepted equivalent organization to perform work of high quality assurance and advanced building science principles. The program will further contribute to the industry trend toward “whole-house” diagnostics, where energy-saving measures are considered to be part of the larger home system, and are analyzed by their contribution not just to energy efficiency but also to durability, moisture management, and health/safety factors.

The Companies recognize that the Kentucky Department of Energy has implemented a Kentucky Home Performance Program through federal stimulus funds that is to the proposed Home Energy Performance Program. Throughout the planning process for this filing, the Companies have met with the State Department of Energy to discuss synergies among the programs and will continue to do so to ensure that the customers will be able to take advantage of benefits provided by the different programs. LG&E/KU customers participating in the Department of Energy Development and Independence's Kentucky Home Performance program will have the opportunity to apply for rebates included in the LG&E/KU Residential Conservation / Home Energy Performance Program redesign once the program is approved by the Commission. Audit requirements will be similar between the two programs and the additional incentives for LG&E/KU customers will likely elevate interest for the customer since out of pocket expenses will be greatly reduced.

3.3 Program Audience

The program will be open to all residential customers with new homes that are at least three years old.

3.4 Program Benefits

This enhanced program structure will encourage additional customer retrofit implementation. The enhanced energy audit structure will provide extended onsite energy audits for the residential customer that will reduce energy usage by a targeted 10%. In addition, customers will receive performance driven incentives for additional implemented energy saving measures that can produce up to an additional 20% in energy savings.

3.5 Participation Goals

The long term goal of the new Home Energy Performance Program is to increase the number of audits from 800 to 2,000 annually for the onsite audit. The Companies feel that this is an attainable goal with additional marketing funds and incentives availability.

The participation goal in the online audit is reduced in years one and two to allow for communication to increase customer awareness. There will be cross promotion with the onsite audit program. The annual participation goal will reach a maximum of 6,000 participants in year three of the program plan.

The projected timeline to achieve these goals has been outlined in the tables below.

3.5.1 Onsite and Online Participation Goals

Participants - Onsite		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
IG&E		600	800	1,000	1,000	1,000	1,000	1,000	6,400
KU		600	800	1,000	1,000	1,000	1,000	1,000	6,400
Total		1,200	1,600	2,000	2,000	2,000	2,000	2,000	12,800

Participants - Online		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
IG&E		1,500	2,500	3,000	3,000	3,000	3,000	3,000	19,000
KU		1,500	2,500	3,000	3,000	3,000	3,000	3,000	19,000
Total		3,000	5,000	6,000	6,000	6,000	6,000	6,000	38,000

3.6 Energy and Demand Impacts

The Home Energy Performance Program will utilize a whole-house approach when assessing the potential for energy efficiency measures, and encourage contractor certification and quality-assurance mechanisms to assure reliable contracting work. This program will have a significant effect on heating and cooling costs, since reductions in a home's heating and cooling loads (usually through increased insulation and reduced air infiltration) are often the first measures that are addressed. The program will also achieve a reduction in peak demand, which is driven primarily by summer air conditioning use. Both usage and demand reduction benefits would be reflected through the incentives available.

The Companies project that the cumulative energy and demand reductions by the end of year seven of the program plan will be 32,953 MWh, 8.4 MW, and 1,053,995 ccf. The projected timeline to achieve these goals is outlined in the table below.

3.6.1 Annual and Cumulative Energy Impacts

The existing Residential Conservation program has proven to be successful. The Residential Conservation Program data to date indicates that over 18,000 customers have participated resulting in energy savings of nearly 13,000 MWh and reduced demand by approximately 2 MW. The redesigned Home Energy Performance Program is expected to produce energy and demand savings well beyond what the current program has experienced.

Annual Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Energy	MWh	2,948	4,182	5,165	5,165	5,165	5,165	5,165	32,953
Demand	MW	0.8	1.1	1.3	1.3	1.3	1.3	1.3	8.4
Gas	CCF	95,718	133,124	165,031	165,031	165,031	165,031	165,031	1,053,995

Cumulative Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Energy	MWh	2,948	7,130	12,294	17,459	22,623	27,788	32,953	
Demand	MW	0.8	1.8	3.1	4.5	5.8	7.1	8.4	
Gas	CCF	95,718	228,843	393,873	558,904	723,934	888,965	1,053,995	

3.7 Customer Incentives

A comprehensive package of incentives is proposed to motivate customers to participate in the Home Energy Performance Program:

- Online Audit: Comparable to the existing Online Audit
 - All customers completing the online audit will receive a comprehensive home energy report as well as 4 high efficiency light bulbs through the mail at no charge.
- On-Site Audit
 - Tier One On-Site Audit: Comparable to the existing Onsite Audit
 - Customers will pay a fee of \$25 to encourage customers to keep scheduled appointments.
 - Customers will receive installations to reduce energy usage by a targeted 10%.
 - Tier Two On-Site Audit Incentive
 - Customers will receive a \$500 incentive upon completion of an additional 10% worth of verified energy savings following a test out (anticipated customer expense of \$1500 - incentive of \$500 = \$1000 total).¹⁸
 - Tier Three On-Site Audit Incentive
 - Customers will receive a \$1000 incentive upon completion of an additional 20% worth of verified energy savings following a test out (anticipated customer expense of \$3500 - incentive of \$1000 = \$2500 total).

3.8 Implementation Plan

A vendor will be utilized to manage the audit and incentive process. The selected vendor will also log and manage “test-out” savings data of those residential customers who engage in the Tier Two or Tier Three audit.

3.9 Annual Program Budget

Annual program budgetary information for the Home Energy Performance Program can be found in the table below. Projected program costs as presented in the 2007 DSM filing have also been included below, as a means for comparison with the costs of the redesigned program.

¹⁸ “Test out” is the follow-up evaluation, measurement, and verification process completed with a customer to validate that the recommended energy efficiency measures have been installed correctly to ensure that the customer will receive the targeted energy reduction discussed during the initial on-site audit on an ongoing basis.

3.9.1 Annual Program Budget

Program Costs								
5000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Administration	\$532	\$595	\$640	\$665	\$637	\$652	\$700	\$4,420
Implementation	\$749	\$1,008	\$1,267	\$1,290	\$1,313	\$1,337	\$1,361	\$8,326
Incentives	\$180	\$240	\$300	\$300	\$300	\$300	\$300	\$1,920
Miscellaneous	-	-	-	-	-	-	-	-
Total	\$1,461	\$1,843	\$2,207	\$2,255	\$2,250	\$2,289	\$2,361	\$14,666

Program Cost Comparison to 2007 DSM Filing							
5000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Program Redesign	\$1,461	\$1,843	\$2,207	\$2,255	\$2,250	\$2,289	\$2,361
Original Program	\$770	\$778	\$796	\$815			
Difference	\$691	\$1,065	\$1,411	\$1,440			

**Year 1-4 cost for the Original Program represent years 2011-2014 from the 2007 DSM Filing.

Program Budgetary Assumptions

- One full-time equivalent as currently required for the residential conservation program.
- Training to cover requirements of program manager and the development of the professional qualified contractors.
- Data processing includes startup IT costs for database to capture program metrics and processing costs of incentives for onsite audits. For online audits it includes the license fee for software engine.
- Program evaluation includes a third party evaluator and quality assurance carried out on Tier Two and Three level audits.

**LG&E AND KU
DEMAND-SIDE MANAGEMENT AND
ENERGY EFFICIENCY PROGRAM PLAN**

**4.0 Residential Low Income
Weatherization Program (WeCare)**

LG&E AND KU DEMAND-SIDE MANAGEMENT AND ENERGY EFFICIENCY PROGRAM PLAN

Program Name: Residential Low Income Weatherization Program (WeCare)

4.1 Program Overview

The Residential Low Income Weatherization Program (WeCare) is an education and weatherization program designed to reduce energy consumption of LG&E and KU's low-income customers. The program is designed to provide energy audits, energy education, perform blower door tests, and install weatherization and energy conservation measures on qualified houses.

To address the growing need in this customer segment, the Companies are seeking approval for the following proposed program enhancements: (1) additional funds that will allow for increased weatherization measures for the low-income customer segment, further increasing energy savings; (2) increase the number of customers served over the program plan. This increased funding request comes as a result of customer feedback as well as additional opportunities identified while providing weatherization measures in customer homes. As a result, increases to the funding level for program tiers and increasing the number of customers served are the only changes being proposed to this program; all other aspects of the program including but not limited to program eligibility and home ownership status shall remain the same; and (3) the Companies seek to extend the WeCare Program through year seven of the proposed program plan.

4.2 Rationale for Request

The Low Income Weatherization Program is designed to reduce the energy consumption of LG&E and KU's low-income customers. The program provides both directly installed weatherization measures and an education component to enlist the customer as a "partner" in ensuring the energy savings. Through the education portion of the program, customers gain a better understanding of how to keep utility bills as low as possible through better energy usage habits. As an added long-term benefit, the educational information provided to customers is something they can take with them wherever they live. Weatherization improves customers' comfort and reduces the tendency to raise the thermostat in winter or lower it in summer. As a home's energy usage is reduced and additional customers are served, customer bills become more affordable.

4.3 Program Audience

Eligible WeCare households will include but not be limited to those residential customers who qualify for Federal Low-Income Weatherization Assistance Program (WAP) or Low Income Home Energy Assistance Program (LIHEAP) services. The marketing and recruitment process identifies low-income households in a variety of ways, including collaboration with community action agencies in the Companies' service territories. Potential participants are pro-actively contacted for

participation in the program. Additionally, customers who feel they will qualify for the program will request to go through an intake process to be qualified. These customers frequently enter the program through word-of-mouth or referral by churches and other community organizations.

4.4 Program Benefits

The benefits of the proposed enhancement to WeCare will allow for additional weatherization measures to the low income customer segment further increasing energy savings. The enhancement to the WeCare Program will allow improvements not currently possible under the present tier structure. It has been established that a subset of the customers participating in the WeCare Program are in need of significant energy saving measures such as housing envelope repair or new high efficiency HVAC units. Without the implementation of these additional measures, the customer will not be able to see an optimum reduction in energy consumption due to the condition of the home.

4.5 Participation Goals

The residential participation goal for this program is to provide an audit, energy education, and home weatherization services to an increasing number of low-income participants per year as shown in the table below. The increase is a combination of additional funding allocation for each of the customers who qualify for the WeCare Program and increasing the number of participants each year from the program plan approval forward. The program participation goals are structured as follows:

4.5.1 Participation Goals

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
LGE	600	850	1,100	1,350	1,600	1,850	2,100	9,450
KU	600	850	1,100	1,350	1,600	1,850	2,100	9,450
Total	1,200	1,700	2,200	2,700	3,200	3,700	4,200	18,900

4.6 Energy and Demand Impacts

The goal of the Low Income Weatherization Program enhancement is to provide additional weatherization measures to low-income customers. By providing greater energy efficient weatherization and energy management techniques, program participants gain greater control over their utility bills. The enhanced WeCare services available through this proposed program will allow for increased weatherization measures that are not available through the current WeCare Program. The additional funding will allow for more costly energy saving measures such as housing envelope repair or new high efficiency HVAC units. This additional benefit would be determined by the Companies.

The proposed increase in funding is expected to translate into a 15% annual increase in energy savings for years one through seven. The cumulative reductions by the end of year seven of the program plan are expected to be 41,455 MWh, 4,130 KW and 3,243,084 CCF.

4.6.1 Annual and Cumulative Energy Reductions

Annual Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Energy	MWh	2,632	3,729	4,825	5,922	7,019	8,115	9,212	41,455
Demand	KW	262	371	481	590	699	808	918	4,130
Gas	CCF	205,910	291,706	377,502	463,298	549,094	634,889	720,685	3,243,084

Cumulative Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Energy	MWh	2,632	6,361	11,186	17,108	24,127	32,243	41,455
Demand	KW	262	634	1,114	1,704	2,404	3,212	4,130
Gas	CCF	205,910	497,616	875,118	1,338,416	1,887,509	2,522,399	3,243,084

4.7 Customer Incentives

Each participant in the WeCare Program is provided an audit, energy education, and home weatherization services at no cost. Their tier level is based upon the participant’s annual energy usage. Due to the proposed increase in WeCare funding, the Allowable Measure Cost per participant will increase as described below.

4.7.1 Customer Incentive per Tier

Tier	Annual Energy Consumption	Current Allowable Measure Cost	Proposed Allowable Measure Cost
A	Up to 1,299 Ccf or up to 11,499 KWh	\$200	\$350
B	1,300 to 1,800 Ccf or 11,500 to 16,000 KWh	\$750	\$1,000
C	Greater than Tier B	\$1,700	\$2,100

Weatherization-services participants will be eligible to receive a wide variety of energy savings measures as per the Measure Input Assumptions and Savings Summary Matrix. Non-quantified benefits include arrearage reductions, reduced disconnections, and improved health and safety conditions. The ultimate benefit received by customers is a more affordable and comfortable home.

When possible and practical, a consolidated service is provided by coordinating with the local Weatherization Assistance Program (“WAP”) and/or other available funding sources, in the effort to serve the participant’s home. The merging of resources minimizes duplication of services and allows the home to receive additional improvements beyond that resourced in the WeCare Program. The service coordination with the local WAP funds will primarily benefit those participants who are in the lower tier of usage and who do not have a high level of expenditure available through the Low Income Weatherization Program.

4.8 Implementation Plan

Program oversight is the responsibility of the Companies. The major responsibilities are to ensure production schedules are met, the evaluation and tracking database is kept current, and the fiscal matters are under control. The Companies make final decisions on the contractors, performance, and expenditures within guidelines set by the program design. The program oversight is provided through contractor monthly invoicing and production reports, as well as evaluations prepared by the evaluation consultant.

4.9 Annual Program Budget

Annual program budgetary information for the Residential Low Income Weatherization Program (WeCare) can be found in the table below. Projected program costs as presented in the 2007 DSM/EE filing have also been included below, as a means for comparison with the costs of the redesigned program. The only changes to the existing program are an increase of funds over the plan period for measures and improvements and an increase of customers. Note that all of the increased funding dollars will go directly to fund improvements and/or efficiency measures in order to increase energy savings for the participants.

4.9.1 Annual Program Budget

Program Costs								
\$000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Administration	\$217	\$212	\$230	\$275	\$266	\$285	\$304	\$1,791
Implementation	\$2,023	\$2,659	\$3,594	\$4,535	\$5,482	\$6,435	\$7,394	\$32,123
Incentives	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$128	\$129	\$133	\$137	\$139	\$142	\$144	\$952
Total	\$2,368	\$3,001	\$3,957	\$4,947	\$5,887	\$6,862	\$7,843	\$34,865

Program Cost Comparison to 2007 DSM Filing							
\$000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Program Redesign	\$2,368	\$3,001	\$3,957	\$4,947	\$5,887	\$6,862	\$7,843
Original Program	\$1,868	\$1,893	\$1,947	\$2,003			
Difference	\$500	\$1,108	\$2,010	\$2,943			

**Year 1-4 cost for the Original Program represent years 2011-2014 from the 2007 DSM Filing.

Program Budgetary Assumptions

- Program labor assumes 1.3 full- time equivalents.
- Implementation / Participation provides for implementation contractor to provide intake services, audits, education and installation of measures.
- The budget is increased to accommodate the additional weatherization measures and increase to number of customers served over the program plan. The funds will be split 50/50 between LG&E and KU.
- Costs are escalated to reflect inflation and expand through year seven of the program plan.

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5.0 Program Development and Administration

LG&E AND KU DEMAND-SIDE MANAGEMENT AND ENERGY EFFICIENCY PROGRAM PLAN

Program Name: Program Development and Administration

5.1 Program Overview

Program Development and Administration was established to capture costs incurred in the development and administration of energy efficiency programs where it is difficult to assign costs specifically to an individual program. These costs include but are not limited to:

- consultant costs for new program concept and initial design
- market research related to new programming
- research and technical evaluation of new technologies and programs
- overall program tracking and management
- attendance at energy efficiency/DSM conferences and workshops
- development of key personnel
- membership in associated trade organizations
- subscriptions to educational and trade publications
- office supplies and equipment related to general management of the organization

The Companies are seeking the following proposed program enhancement: the addition of three full-time positions to the current head count to the Program Development and Administration infrastructure.

5.2 Rationale for Request

Program growth requires the Companies to seek additional staff to support procurement; marketing; financial analysis; and the rigorous evaluation, measurement, and verification (EM&V) efforts associated with each of the programs in the DSM/EE portfolio. EM&V efforts of the Program Development and Administration include data on program design, delivery, impacts, and return on investment.

High demand areas that have been identified within the Department include procurement, marketing and financial analysis. All three positions play a vital role in the ultimate success for DSM/EE programming. The need for a full-time procurement position is driven by the significant amount of contracting associated with individual programs including: development of scope of work; drafting of Requests for Proposals; identification of potential bidders; issuance of the RFP; evaluation of returned proposals; issuance of an award recommendation; drafting and negotiation of a contract and all its terms; monitoring of contract performance; monitoring market conditions of services to determine contract economics; and modifying or amending contracts as conditions change. The second need identified due to program growth is for a full-time marketing employee. Because customer participation in DSM/EE programs is voluntary, a substantial amount of program promotion is required to obtain the desired levels of participation. The third identified need is for a full-time financial analyst. The financial analyst will provide direct application of focused research and rigorous economic and statistical analysis, as well as provide ongoing monitoring of complex metrics associated with

individual program and departmental reporting. The analyst position will further support the Companies' EM&V process as it relates to design, delivery, impacts, and return on investment. Program Development and Administration support is essential for the long-term sustainability of the energy efficiency portfolio.

5.3 Implementation Plan

Program Development and Administration is an ongoing daily activity, therefore there is not a specific implementation strategy. Expenditure activity proposed in this filing will not commence until the filing is approved by the Commission.

5.4 Annual Program Budget

Annual program budgetary information for Program Development and Administration can be found in the table below. Projected program costs as presented in the 2007 DSM/EE filing have also been included below, as a means for comparison with the costs of the redesigned program.

5.4.1 Annual Program Budget

Program Costs								
S000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Administration	\$910	\$939	\$970	\$1,001	\$1,042	\$1,084	\$1,127	\$7,073
Implementation	\$17	\$18	\$18	\$18	\$19	\$19	\$20	\$129
Incentives	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$333	\$340	\$347	\$354	\$360	\$368	\$375	\$2,477
Total	\$1,260	\$1,297	\$1,335	\$1,373	\$1,421	\$1,471	\$1,522	\$9,679

Program Cost Comparison to 2007 DSM Filing								
S000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	
Program Redesign	\$1,260	\$1,297	\$1,335	\$1,373	\$1,421	\$1,471	\$1,522	
Original Program	\$798	\$818	\$839	\$860	\$0	\$0	\$0	
Difference	\$462	\$479	\$496	\$513	\$1,421	\$1,471	\$1,522	

**Year 1-4 cost for the Original Program represent years 2011-2014 from the 2007 DSM Filing.

Program Budgetary Assumptions

- Program Labor assumes 3 existing full- time equivalents with the addition of the 3 newly proposed full- time equivalents for a total of 6. New full- time equivalents assumption includes: Department Manager (1), Analyst (2), Procurement (1), Marketing (1) and Financial Analyst (1).
- Market research includes customer surveys, focus groups and acquisition of market and regulatory intelligence.
- New program R&D provides for identifying, testing and analyzing new energy efficiency technologies and potential programs.
- Data processing provides for computer equipment and license fees.

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NEW PROGRAMS

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6.0 Smart Energy Profile Program

LG&E AND KU DEMAND-SIDE MANAGEMENT AND ENERGY EFFICIENCY PROGRAM PLAN

Program Name: Smart Energy Profile Program

6.1 Program Overview

The objective of the Smart Energy Profile Program is to provide approximately 50% of residential customers of LG&E/KU with a customized matrix of tips, tools and energy efficiency programming recommendations based on individual household energy consumption over the first four years of the program. These reports are benchmarked against similar properties by size, type, number of residents, and location.

The Smart Energy Profile Program will use available customer data and technology to create an individualized household report containing a collection of customized information. The report will be mailed to the customer in a formation that will help the customer make better informed choices as it relates to energy usage and the associated costs. Information presented in the report will include a comparison of the customer's energy usage to that of similar houses (collectively) and a comparison to the customer's own energy usage in the prior year. The objective of this program will be to educate customers about their energy consumption, encourage them to reduce consumption and empower them to use energy more wisely. The Smart Energy Profile will provide tips that are specific to the customer and suggest Energy Efficiency Programs that would be helpful in reducing energy costs. A sample Smart Energy Profile currently being utilized by the Sacramento (CA) Municipal Utility District can be found in Volume IV, Exhibit J-2.

6.2 Rationale for Program Request

The Smart Energy Profile Program will be designed to increase customer participation in DSM energy efficiency programming. By utilizing existing customer data, such as service point information, account information and current energy consumption, targeted information can be disseminated to the customer. Elements that are presented in the report will include a comparison of the customer's energy usage to that of their neighbors (collectively), a comparison to the customer's own energy usage in the prior year as well as customized and targeted marketing and messages. The Smart Energy Profile Program is different from the current residential audit program offered by LG&E/KU. Where the current residential audit program needs to be initiated by the customer either through use of an online tool or scheduling of an in-home energy audit, the proposed Smart Energy Profile Program will utilize available data points for 100% of LG&E/KU targeted customers and generate fully customized energy usage report. Based on the customer energy usage report, targeted marketing and message information is presented to the customer that will include specific incentive programs as well as energy efficiency recommendations that will be based on the individual household energy usage patterns.

The goal of the Smart Energy Profile Program is to provide a customized program for a LG&E/KU residential customer that is designed to reduce consumption. When displayed comparatively, customers will have a clear concept and understanding of their household energy usage.

6.3 Program Audience

The audience for the Smart Energy Profile Program will encompass residential customers.

6.4 Program Benefits

Several municipal, cooperative, and investor-owned utilities across the United States have behavioral-marketing programs in place for residential customers, including Sacramento Municipal Utility, Dominion Resources, San Diego Gas and Electric, Southern California Edison Company, Commonwealth Edison, Lake Country Power (Minnesota), Austin Public Utilities (Minnesota), National Grid, Southern California Public Power Authority, Xcel Energy, Sempra (Southern California Gas), Connexus Energy (Minnesota), and Owatonna Public Utilities (Minnesota).

As evidenced by an independent evaluation of Sacramento Municipal Utility District's behavioral marketing program, located in Volume IV, Exhibit J-3, there is a clear demonstration that implementation of a combination of energy efficiency, behavioral science and direct marketing tools to the residential customer are successfully achieving annual demand reductions.¹⁹

The proposed LG&E/KU Smart Energy Profile Program will be a highly comparable program to those currently deployed with other utilities. Using available data from the existing behavioral marketing programs across the United States, it is reasonable to expect that the LG&E/KU Smart Energy Profile Program will also yield measurable savings that will support the Companies in meeting the increasing regulatory efficiency targets.

6.5 Participation Goals

LG&E/KU is currently expecting to provide reports to approximately 50% of the residential market over the first four years of the program. This figure has been proposed based on a report developed by Ayres, Raseman and Shih of Yale University located in Volume IV, Exhibit J-2, shows that the greatest potential savings are derived from the high 50% energy users, and that energy users below average energy consumption produce minimal savings.

¹⁹ Data also indicates that the demand reductions are across all household types and is not limited to a specific customer segment.

There will be an evaluation of the program after year one, to determine effectiveness and capabilities. Years two and three of the program will be an extended roll out period. In year four, a rollout to the 50% target will begin.

6.5.1 Participation Goals

Participants	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
I GE Dual Fuel	40,000	80,000	80,000	145,000	145,000	145,000	145,000	780,000
I GE Electric Only	10,000	15,000	15,000	25,000	25,000	25,000	25,000	140,000
KU Electric Only	55,000	110,000	110,000	205,000	205,000	205,000	205,000	1,095,000
Total	105,000	205,000	205,000	375,000	375,000	375,000	375,000	2,015,000

6.6 Energy and Demand Impacts

As previously stated, energy impacts for the Smart Energy Profile Program have been calculated assuming reductions from behavioral changes only. Once the target number of program participants has been reached in year four, annual reductions from the program are anticipated to be 106,475 MWh, 20.3 MW, and 1,767,178 CCF. The anticipated annual energy impacts are depicted in the table below.

6.6.1 Annual Energy Impacts

Annual Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Energy	MWh	29,664	58,078	58,078	106,475	106,475	106,475	106,475	106,475
Demand	MW	5.7	11.1	11.1	20.3	20.3	20.3	20.3	20.3
Gas	CCF	487,497	974,995	974,995	1,767,178	1,767,178	1,767,178	1,767,178	1,767,178

6.7 Implementation Plan

The first stage of implementing the Smart Energy Profile Program will be selecting a vendor to deploy the program. By combining utility data and third-party data demographics, the selected vendor will create personalized Smart Energy Profiles for the Companies’ chosen customer target base. The vendor will create the reports, which will be mailed to the targeted customers. From the time a contract is executed with a vendor, we anticipate it will take four to six months to begin sending the first reports to customers. After program launch, maintenance and ongoing report delivery will be performed by the vendor with assistance from the Companies.

6.8 Annual Program Budget

Annual program budgetary information for the Smart Energy Profiles Program can be found in the table below.

6.8.1 Annual Program Budget

Program Costs \$000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Administration	\$79	\$82	\$84	\$87	\$90	\$93	\$97	\$612
Implementation	\$1,260	\$2,087	\$2,124	\$3,165	\$3,222	\$3,280	\$3,339	\$18,477
Incentives	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$32	\$108	\$32	\$58	\$32	\$59	\$32	\$354
Total	\$1,371	\$2,277	\$2,241	\$3,311	\$3,344	\$3,433	\$3,468	\$19,443

Program Budgetary Assumptions

- Program labor assumes 0.5 full- time equivalents.
- Training is to support the ongoing needs of the Program Manager as seen historically from other programs.
- Data processing is assumed for communication between IT and 3rd party vendor.
- Outside services is based on a customer rate of \$12 through year one, \$10 through years two and three; and \$8 for the remaining years of the program. This fee represents the cost of bi-monthly mailings of reports to customers and the data manipulation carried out by an external vendor. The reduction in cost represents economies of scale as the number of customers included into the program increases.
- Program evaluation is based on previous evaluation costs. Evaluations to be conducted in years two, four, and six. The results of the evaluations will be used to develop the program and more effectively target customers.

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7.0 Residential Incentives Program

LG&E AND KU DEMAND-SIDE MANAGEMENT AND ENERGY EFFICIENCY PROGRAM PLAN

Program Name: Residential Incentives Program

7.1 Program Overview

The Residential Incentives Program is a new program that will encourage customers to purchase various Energy Star appliances, HVAC equipment, or window films that meet certain requirements, qualifying them for an incentive.

This program is designed to provide direct financial incentives to purchase and use these products. This is a simple program where as long as a qualifying appliance or product is purchased during the program period, only a completed Rebate Application Form and a copy of the proof of purchase (i.e., valid store receipt) needs to be submitted to receive the applicable incentive.

7.2 Rationale for Program Request

Each of these offerings promotes energy savings and reduces energy demand at peak times during the year. Appliances qualified as Energy Star, which incorporate advanced technologies, can use 10% - 50% less energy than non-Energy Star qualified appliances.²⁰ Energy Star qualified appliances will provide long-term benefits (in terms of energy savings). As much as half of the energy used in a home goes to heating and cooling. Making informed decisions about a home's heating, ventilating, and air conditioning (HVAC) system can have a big effect on customer energy consumption. Properly installed and sized HVAC systems with an Energy Star rating can reduce heating and cooling costs by as much as 30%.²¹ In addition, according to the International Window Film Association, the installation of window films can significantly reduce solar heat gain which result in reduced air conditioning costs and reduced HVAC equipment wear and tear/maintenance.²² While window films are not Energy Star rated they can be evaluated based on their shading coefficient (SC), solar heat gain coefficient (SHGC), or various other equivalent criteria (i.e. emissivity). The incentive structures for appliance and HVAC systems are designed to provide an incentive for the customer to choose the more energy efficient model, sized correctly, to promote greater energy savings. For a customer to qualify for a window film incentive, the product must meet a minimum SC, SHGC, or equivalent standard.

In early 2010, the Kentucky Department for Energy Development and Independence (DEDI) received funds from the U.S. Department of Energy for a similar energy efficient appliance rebate program. At the start, the program had approximately \$4 million in funds available for rebates.²³

²⁰ See www.energystar.gov

²¹ See www.energystar.gov

²² See www.iwfa.com

²³ See <http://www.kyappliance rebates.com>

The rationale for the Companies continuing to pursue approval for its Residential Incentive Program is to provide customers across its service territory an additional opportunity for incentive dollars thereby continuing to support the Commonwealth’s efforts to promote energy savings through energy efficiency.

7.3 Program Audience

The program will be open to all residential customers. Incentives will be linked to customer accounts. This will be part of the process in determining eligibility. This guideline is in place to determine which types of purchases are eligible (i.e. homebuilders on behalf of new homeowners and advocacy groups on behalf of their clients). This is a simple program where as long as a qualifying appliance or product is purchased during the program period, the customer need only submit a completed incentive form and a copy of the proof of purchase (i.e., valid store receipt) to receive the applicable incentive.

7.4 Program Benefits

The Residential Incentives Program will reward customers for purchasing Energy Star qualified appliances, HVAC equipment, or window films. Reduced energy utilization will provide benefits to the environment and will assist in the reduction of the customer’s energy expenses.

7.5 Participation Goals

Yearly participation goals have been generated for the proposed Residential Incentive Program through year seven of the program plan. By the end of the program plan, the Companies will have provided 128,200 incentives. The annual and cumulative participation goals for the Residential Incentives Program can be found in the table below.

7.5.1 Participation Goals

Annual Incentives	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
LGE	5,850	7,000	10,250	10,250	10,250	10,250	10,250	64,100
KU	5,850	7,000	10,250	10,250	10,250	10,250	10,250	64,100
Total	11,700	14,000	20,500	20,500	20,500	20,500	20,500	128,200

Cumulative Incentives	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
LGE	5,850	12,850	23,100	33,350	43,600	53,850	64,100
KU	5,850	12,850	23,100	33,350	43,600	53,850	64,100
Total	11,700	25,700	46,200	66,700	87,200	107,700	128,200

7.6 Energy Impacts

Energy impact for the Residential Incentives Program has been calculated the through year seven of the program plan. The cumulative energy and demand reductions by the end of year seven will be 100,720 MWh and 18.6 MW. The Residential Incentives Program is expected to result in the annual and cumulative energy reductions described in the tables below.

7.6.1 Energy and Demand Impacts

Annual Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Energy	MWh	8,544	10,721	16,291	16,291	16,291	16,291	16,291	100,720
Demand	MW	1.5	1.9	3.0	3.0	3.0	3.0	3.0	18.6
Gas	CCF	-	-	-	-	-	-	-	-

Cumulative Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Energy	MWh	8,544	19,266	35,556	51,847	68,138	84,429	100,720
Demand	MW	1.5	3.4	6.4	9.5	12.5	15.6	18.6
Gas	CCF	-	-	-	-	-	-	-

7.7 Customer Incentive

Program-provided financial incentives will offset the cost of energy improvements for residential customers. The Companies seek flexibility in modifying the program incentives if needed within budgetary parameters as approved by the Commission. Any adjustments to the incentives will be determined on an annual basis by the Companies to achieve desired participation levels. The overall budget of the program will not increase. For various items on the list, modified incentives may help to spur participation as needed.

For each energy efficient appliance or technology, an initial proposed incentive is listed below:

7.7.1 Customer Incentive per Category

Category	Item	Incentive
Appliances	Heat Pump Water Heaters (HPWH)	\$300 per qualifying item purchased
	Washing Machine	\$75 per qualifying item purchased
	Refrigerator	\$100 per qualifying item purchased
	Freezer	\$50 per qualifying item purchased
	Dishwasher	\$50 per qualifying item purchased
Window Film	Window Film	Up to 50% of materials cost only; max of \$200 per customer account; product must meet applicable criteria.
HVAC	Central Air Conditioner	\$100 per Energy Star item purchased plus an additional \$100 per SEER improvement above minimum*
	Electric Air-Source Heat Pump	\$100 per Energy Star item purchased plus additional \$100 per SEER improvement above minimum*

**Note: For example, a customer receives \$100 incentive if they purchase a new Energy Star 15 SEER central AC unit. The customer would also receive an additional incentive of \$100 since the*

unit is an Energy star certified 15 SEER which is 1 SEER above the federal minimum. If the customer had purchased an Energy Star 16 SEER unit, customer would have received an incentive of \$300 (\$100 for being Energy Star rated, plus \$200 for being 2 SEER ratings above federal minimum). Incentives will be pro-rated for 0.5 increases in SEER ratings.

7.8 Implementation Plan

The Companies will look to operate the entire incentive processing via a third party. The program will be implemented as soon as approval is received.

7.9 Annual Program Budget

Annual program budgetary information for Residential Incentives can be found in the table below.

7.9.1 Annual Program Budget

Program Costs \$000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Administration	\$428	\$480	\$616	\$623	\$630	\$637	\$644	\$4,058
Implementation	\$117	\$140	\$205	\$205	\$205	\$205	\$205	\$1,282
Incentives	\$943	\$1,175	\$1,773	\$1,773	\$1,773	\$1,773	\$1,773	\$10,980
Miscellaneous	\$80	\$51	\$52	\$83	\$54	\$55	\$86	\$439
Total	\$1,567	\$1,846	\$2,646	\$2,683	\$2,661	\$2,669	\$2,707	\$16,780

Program Budgetary Assumptions

- Labor cost will assume 0.75 full-time equivalent Program Manager and a 0.75 full-time equivalent Customer Service Associate for internal needs.
- Budgeted \$10 per rebate for third party processor of incentives.
- 50% / 50% split of program budget between KU and LG&E.
- Advertising / Marketing is assumed at \$20 per unit.
- Incentives are based on individual participation counts.
- Outside service / install assumed that rebate processing fee and verification will be performed by a third-party vendor.

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8.0 Residential Refrigerator Removal Program

LG&E AND KU DEMAND-SIDE MANAGEMENT AND ENERGY EFFICIENCY PROGRAM PLAN

Program Name: Residential Refrigerator Removal Program

8.1 Program Overview

The Refrigerator Removal Program is designed to provide removal and recycling of inefficient secondary refrigerators and freezers from LG&E and KU customer households. The removal of these inefficient units will reduce consumption and demand. The Companies will work with identified third-party vendors to collect and transport the inefficient appliance to an appropriate recycling center that will be responsible for adhering to local, state, and federal recycling ordinances. Customers participating in this program will be provided a one-time incentive.

8.2 Rationale for Program Request

Often secondary refrigerators are kept after a new appliance purchase if the removal and recycling of the old appliance is not a convenient option. Some refrigerators are kept as additional storage but research suggests that lack of convenient removal is the overriding factor. Ease of arranging the removal of the unneeded or unwanted appliance is the key driver which includes making contact with the customer and scheduling the pick-up. Although some households are happy to have the removal carried out for free, the incentive offered will increase participation for a portion of customers who are indifferent to removal.

Secondary refrigerators will often be considerably inefficient in comparison with modern models. According to a presentation provided by Reed, Bailey and Morrissey at the 2009 AESP conference,²⁴ refrigerator models of the late 1970s use in excess of 1,500 kWh annually and 1980s models use over 1,000 kWh. Energy savings achieved typically represent around 40% to 60% of the refrigerators collected, as not all refrigerators would have continued usage. Furthermore, according to Energy Star, modern Energy Star model refrigerators use approximately 500 kWh annually. This means a home with a new refrigerator and one from the 1970s could reduce overall refrigeration costs by over 75% by having the older model removed. Because refrigerators operate frequently, the removal of a refrigerator lowers peak demand and reduces power consumption.

Based on a New York Times article, recycling secondary refrigerators/freezers is a program which has been launched over 20 states including California Edison, Georgia Power, National Grid, Austin Energy, and Nevada Energy.²⁵

²⁴ Reed, J., Bailey, C., Morrissey, M. (April, 2009). AESP Spring Implementation Conference, Charlotte, NC. *That Old Fridge: Where Does It Go?*

²⁵ Peters, S. (2009, August). Refrigerator Recycling Programs Take Off. *The New York Times*.

8.3 Program Audience

The program will be open to all residential electric customers. Eligibility for multi-family unit is acceptable, provided the incentives are tied to customer accounts. That is, the incentives are paid to residential customers. For these situations, coordination is needed between owners and renters in order to ensure removals are eligible under the program.

8.4 Program Benefits

Removal of secondary refrigerator units from the electric grid will result in a reduction of consumption and demand on the grid. The program will target customers who are likely to own a secondary refrigerator which is typically stored in a garage or a basement and is not used to full capacity.

8.5 Participation Goals

Participation goals for the Residential Refrigerator Removal Program are based on studies of other utility programs and results in the Midwest, including Ohio and Indiana. Based on this research, participation rates in refrigerator removal programs range on average from 1%-2%, with 3% being the maximum (Volume IV, Exhibit K-1 through K-4). The specific annual participation goals for this program are detailed in the table below.

8.5.1 Participation Goals

Participants	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
LGE	2,000	4,000	5,000	5,000	5,000	5,000	5,000	31,000
KU	2,000	4,000	5,000	5,000	5,000	5,000	5,000	31,000
Total	4,000	8,000	10,000	10,000	10,000	10,000	10,000	62,000

8.6 Energy and Demand Impacts

Energy impact for the Residential Refrigerator Removal Program has been calculated year seven of the program plan. The cumulative energy and demand reductions by the end of year seven will be 46,500 MWh and 5.3 MW. The annual and cumulative energy impacts expected to result from the Residential Refrigerator Removal Program are listed in the table below.

8.6.1 Energy and Demand Impacts

Annual Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Energy	MWh	3,000	6,000	7,500	7,500	7,500	7,500	7,500	46,500
Demand	MW	0.3	0.7	0.8	0.8	0.8	0.8	0.8	5.3

Cumulative Reductions		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Energy	MWh	3,000	9,000	16,500	24,000	31,500	39,000	46,500
Demand	MW	0.3	1.0	1.9	2.7	3.6	4.4	5.3

8.7 Customer Incentives

The purpose of this program's proposed incentive is to offset the perceived customer convenience of keeping the unit. Other utilities with similar programs have started with an initial \$30-\$35/unit incentive, and some utilities in the West, such as Nevada Energy, have raised this value as the program has matured.²⁶ The incentives proposed for this program are proposed to start at \$30, with the ability to increase incrementally in later years if participation levels should fall. The incentive level will be reviewed on an annual basis.

8.8 Implementation Plan

The key stage of implementing this program will be selecting a vendor to carry out the program. The vendor will require time to startup the program, specifically by increasing capability to recycle refrigerators and freezers in the locality. Through marketing efforts such as direct mail or bill inserts, the Companies will identify residential customers eligible for the program.

8.9 Annual Program Budget

Annual program budgetary information for the Residential Refrigeration Recycling Program can be found in the table below.

8.9.1 Annual Program Budget

Program Costs \$000s	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
Administration	\$199	\$326	\$395	\$404	\$412	\$421	\$431	\$2,388
Implementation	\$480	\$977	\$1,244	\$1,266	\$1,289	\$1,312	\$1,336	\$7,903
Incentives	\$120	\$240	\$300	\$350	\$350	\$400	\$400	\$2,160
Miscellaneous	\$17	\$42	\$17	\$17	\$17	\$17	\$45	\$172
Total	\$816	\$1,586	\$1,956	\$2,037	\$2,068	\$2,150	\$2,211	\$12,823

²⁶ Reed, J., Bailey, C., Morrissey, M. (April, 2009). AESP Spring Implementation Conference, Charlotte, NC. *That Old Fridge: Where Does It Go?*

Program Budgetary Assumptions

- Program labor assumes 0.5 full- time equivalent.
 - Outside services is based on a collection and recycling charge of \$120 per unit.
 - Advertising is budgeted at \$30 per unit.
- Program evaluation is based on previous evaluation costs, one following year one and another at the end of the project.

**LG&E AND KU
DEMAND-SIDE MANAGEMENT AND
ENERGY EFFICIENCY PROGRAM PLAN**

**EXISTING AND UNCHANGED PROGRAMS TO THE
DSM/EE PORTFOLIO**

**LG&E AND KU
DEMAND-SIDE MANAGEMENT AND
ENERGY EFFICIENCY PROGRAM PLAN
(2011-2014)**

**9.0 Residential High Efficiency Lighting, Residential
New Construction, Residential and Commercial HVAC
Diagnostic and Tune Up, Customer Education and
Public Information, and the Dealer Referral Network**

**LG&E AND KU
DEMAND-SIDE MANAGEMENT AND
ENERGY EFFICIENCY PROGRAM PLAN (2011-2014)**

Program Name: Existing and Unchanged Programs to the DSM Portfolio

9.1 Overview

Several of the programs approved by the Kentucky Public Service Commission in the 2007 filing (Case No. 2007-00319) will remain unchanged and will continue at their currently approved funding level and duration of program service through 2014. Those programs include: Residential High Efficiency Lighting, Residential New Construction, Residential and Commercial HVAC Diagnostic and Tune Up, Customer Education and Public Information, and the Dealer Referral Network. A brief overview and update on the current progress of each program is provided below.

Residential New Construction: The New Residential Construction Program is designed to reduce residential energy usage and facilitate market transformation by creating a shift in builders' new home construction to include energy-efficient construction practices. This 2010 "Leadership in Housing Award" winning program has succeeded in engaging a significant portion Kentucky's new-home construction sector through outreach and training activities. Orientation sessions introduced builders, contractors, design professionals and energy raters to the requirements and benefits of program participation. As a result of this program, the Companies have experienced an energy reduction of 4,302 MWh through 2010.

Residential High Efficiency Lighting: The Residential High Efficiency Lighting Program promotes an increased use of ENERGY STAR® rated CFLs within the residential sector of LG&E and KU electric consumers. The Residential High Efficiency Lighting Program has distributed 2,053,246 compact fluorescent bulbs through direct-mail delivery, customer walk-in centers and retailer coupons resulting in an energy reduction of 137,534 MWh through 2010.

Residential and Commercial HVAC Diagnostic and Tune Up: The Residential and Commercial HVAC Diagnostic and Tune-up Program targets customers with HVAC system performance issues. The Residential and Commercial HVAC Diagnostic and Tune-up Programs have completed over 1,100 diagnostics resulting in an energy reduction of 1,293 MWh through 2010.

Customer Education and Public Information:²⁷ These programs can help customers make sound energy-use decisions, increase control over energy bills and empower them to actively manage their energy usage. Customer Education and Public Information is accomplished through two processes: a mass-media campaign and an elementary- and middle-school program. The mass media campaign included the launch of its Smart Saver-themed public-service advertisements to encourage customers to take easy but effective steps to reduce their energy usage. The elementary and middle school program, which provides professional development and innovative materials to K-8 teachers, helps educators use creative ways to incorporate theatre, games, experiments and other fun interactive

²⁷ The energy and demand reductions influenced through customer education and public awareness initiatives will be reflected through impacts achieved by the individual energy efficiency programs.

initiatives into their science curriculum. Materials help educators teach science concepts such as basic energy and energy efficiency concepts.

The Companies partnered with the National Energy Education Development (NEED) Project, a nonprofit education association, to develop curriculum targeted for specific school districts. All materials correlate with the Kentucky Core Content and the National Science Education Standards. Since the program began last year, 67 percent of eligible schools in the LG&E and KU service territory have taken advantage of the training opportunities, with more than 1,300 teachers participating. That means the training has affected nearly 74,000 elementary and middle school students.

Dealer Referral Network:²⁸ The Dealer Referral Network assists customers in identifying qualified and reliable personnel to install energy efficiency improvements recommended and/ or subsidized by the various energy efficiency programs.

For additional information such as associated metrics and program budgets on these programs, the approved programs in filing Case No. 2007-00319.

9.2 Rationale for the Request to Maintain Current Program Design

In an effort to continually improve and strengthen the DSM portfolio, certain programs that were submitted as part of the 2007 filing (Case No. 2007-00319) will remain unchanged in regard to program design, budgets, and associated metrics. The rationale for the Companies not seeking any changes to these particular programs at this time is that the programs can be categorized as either a “market transformation program” or having insufficient data to necessitate a program change.

The programs regarded as market transformation programs include: Residential High Efficiency Lighting; Residential New Construction; Residential and Commercial HVAC Diagnostic and Tune Up; and Customer Education and Public Information. Market transformation programs can be defined as programs that provide long-lasting sustainable changes in the structure or functioning of a market achieved by reducing barriers to the adoption of energy efficiency measures to the point where further publicly-funded intervention is no longer appropriate in that specific market.²⁹

Residential High Efficiency Lighting Program while successful has also faced with the 2007 Energy Bill mandates which will end the production of incandescent bulb manufacturing beginning in 2012 making high efficiency lighting mainstream. The Companies have made a conscious decision to assess new lighting technologies to determine a strategy and next steps for the lighting program.

Residential New Construction was launched to facilitate market transformation by creating a shift in builders’ new home energy efficient construction practices and to spur an increase in Home Energy Rating System (HERS) rater demand. The Residential New Construction Program has been

²⁸ The Dealer Referral Network increases energy savings as it will facilitate implementation measures in various programs. The energy impacts will be captured within those individual programs.

²⁹ Eto J., Prahl, R. and Schlegel, J. (1996). *A Scoping Study on Energy-Efficiency Market Transformation by California Utility DSM Programs*. Energy & Environment Division Earnest Orlando Lawrence Berkeley National Laboratory University of California Berkeley, California. <http://eetd.lbl.gov/EA/EMP/reports/39058.pdf>

exceedingly successful and the Companies have made a conscious decision to request no modifications at this time.

Education and Public Information was fully executed in 2009 with a successful marketing campaign and school based education program. Launched to increase public awareness and understanding of both the urgent need for more efficient use of energy and the environmental and financial impacts created by climate change issues, the Education and Public Information Program has been wide spread throughout the LG&E and KU service territories.

Residential and Commercial HVAC Diagnostic Programs are seasonal programs that operate from April to September each year. Due to the seasonality of the programs, the Companies do not feel that there is sufficient data to necessitate a program change at this time.

Each of these programs has been successful in advancing the effective and deliberate use of energy by end-use customers. As such, the Companies propose to continue these existing programs as previously approved by the Commission through 2014. Through ongoing and comprehensive analysis, the Companies will determine whether to pursue these programs further in a later DSM expansion filing or discontinue the programs in 2014.

**LG&E AND KU
DEMAND-SIDE MANAGEMENT AND
ENERGY EFFICIENCY PROGRAM PLAN**

10.0 ICF International Report

**Louisville Gas and Electric Company /
Kentucky Utilities Company
DSM Program Review**

Report

March 18, 2011

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**Louisville Gas and Electric Company /
Kentucky Utilities Company**

DSM Program Review

Report

March 18, 2011

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Executive Summary

Louisville Gas and Electric Company (LG&E) and Kentucky Utilities Company (KU), and, hereafter referred to as “LG&E / KU” or the “Companies”, engaged ICF to provide a broad review of their demand side management (DSM) plan for 2011 to 2017. This review included a detailed overview of existing programs that the Companies are enhancing and re-filing, and new programs. ICF also conducted a portfolio-level review of the Companies’ overall DSM investments. Specifically, the Companies engaged ICF to:

1. Review the DSM planning materials and process as documented by the Companies.
2. Review the individual program designs developed by the Companies.
3. Compare the planning process and individual DSM program designs to known best practices and appropriate peer utilities.
4. Identify any gaps or shortcomings in the process or program designs, including specific recommendations regarding alternative approaches or designs.
5. Participate in program design and planning discussion as may be required by the Companies.
6. Prepare a report summarizing the review and providing a third-party opinion regarding the sufficiency of the process and designs.

This report is the culmination of ICF’s work for this project and represents the summary report detailed in Task 6 above.

Regulatory and Policy Environment

The market for energy efficiency is evolving quickly, and nowhere in the country is this more evident than in Kentucky. Since ICF’s last review of the Companies’ programs in 2007, both state and federal policies have shifted strongly in favor of energy efficiency. At the state level, this was driven by Kentucky Governor Steven Beshear, who has placed energy efficiency squarely at the top of his Seven Point Energy Strategy. At the federal level, this was driven largely by the passage of 2009 American Reinvestment and Recovery Act (ARRA, or “the Stimulus package”). ARRA outlayed more than \$16 billion nationwide in energy efficiency and related investments; Kentucky is slated to receive over \$150 million during the three-year period spanning 2009-2011.

Commensurate with federal and state policy agendas, the Companies have made energy efficiency a high priority in their corporate strategies. In 2008, the Companies appointed a new Customer Energy Efficiency Management team, including a new director and two new department managers. The Companies also hired four additional program managers to manage new programs, and three new researchers/program analysts. These human resource investments represent a significant commitment to energy efficiency that will leave the Companies well-positioned to successfully grow their DSM portfolio in the future.

The Companies are also developing a DSM portfolio that is consistent with many of the specific actions outlined in the Governor’s plan. By undertaking this review, the Companies are committed to incorporating best practices into their programs. In addition, with the new programs, the Companies are addressing the potential for energy efficiency in both the mass market and in targeted end uses.

Best Practices

Energy efficiency program *best practice* is much more a term of art than science; there simply is too much variability across objectives, regulatory structures, and program types to enable simple broad conclusions about what is *best*. Typically, best practice is considered a function of program result, such as whether the program met or exceeded its objectives. An alternative view of best practice focuses on the design and execution of essential program elements, such as marketing, service delivery, program back office efficiency, etc. For example, though a particular program might not have delivered particularly strong overall results, certain elements of its structure, such as incentive fulfillment, might be considered best-in-class. Alternatively, while difficult, it is not unheard of for a program based on inefficient or flawed processes to nevertheless deliver outstanding results.

In general, best practice programs and portfolios seek to achieve each of the following goals:

- Provide programs that are cost-effective.
- Provide a portfolio that covers hard-to-reach markets.
- Provide program budgets that are sufficient to deliver the programs effectively to market.
- Provide programs that have sufficient budgets for marketing, training and education (market transformation activities).
- Provide a portfolio that strikes an appropriate balance of mitigated risk, proven program types, and more innovative programs.
- Provide a portfolio that is flexible enough to adapt to changing market conditions in a cost-effective manner.
- Provide an evaluation, measurement, and verification (EM&V) budget for each program, and plans for program evaluations on a regular basis.

Portfolio Review

The Companies' programs satisfy each of the best practice criteria listed above. In addition, the Companies' projected program costs and savings compare favorably to the rest of the country. The Companies' overall cost of savings, expressed in dollars per first year kWh, are projected to be less expensive than the median cost of savings achieved by program administrators in the South, the Midwest, and the U.S. as a whole. In addition, the level of savings achieved by the Companies, expressed both as a percentage of annual kWh sales, and annual kW peak demand, also exceeds that of their peers.

Because the programs easily pass standard cost-effectiveness tests, and participants gain significant benefits from the programs, the Companies should continue to design and market the programs broadly, in order to increase participation and minimize the number of non-participants.

Overall Conclusions

Our review of the Companies' programs, and the context in which they were developed, leads us to the following conclusions:

DSM Program Review
Executive Summary

- The Companies' proposed portfolio appropriately addresses evolving federal and state policies. In addition, the portfolio contains many elements of best practices, including cost-effectiveness, broad targeting, and flexible design.
- The Companies should commission a potential study or market characterization study, an action item the governor has also proposed for the state in his energy plan. The study results could be used to help plan programs that capture savings where potential is greatest and/or most cost-effective.
- Based on a market characterization study of the commercial sector, develop additional programs targeting the commercial sector.
- The Companies should continue to market their successful load control program, and offer additional demand response options.
- With their Residential Conservation/Home Energy Performance and Low Income Weatherization (WeCare) programs, the Companies should continue to leverage federal and statewide resources, where applicable, in order to maximize available funding and supplement existing program participation.
- As behavior-based programs gain entry into utility portfolios, the Companies should develop relationships with program implementers and utility program managers in order to learn from others' experiences, and adjust the design and delivery of their own behavior-based initiatives, including the Smart Energy Profile program.
- Coordinate and cross-promote their new residential programs with existing residential programs.

DSM Program Review
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1. Introduction

1.1. Scope of ICF's Review

Louisville Gas and Electric Company (LG&E) and Kentucky Utilities Company (KU), and, hereafter referred to as "LG&E / KU" or the "Companies", engaged ICF to provide a broad review of their demand side management (DSM) plan for 2011 to 2017. This review included a detailed overview of existing programs that the Companies are enhancing and re-filing, and new programs. ICF also conducted a portfolio-level review of the Companies' overall DSM investments. Specifically, the Companies engaged ICF to:

1. Review the DSM planning materials and processes as documented by the Companies.
2. Review the individual program designs developed by the Companies.
3. Compare the planning processes and individual DSM program designs to known best practices and appropriate peer utilities.
4. Identify any gaps or shortcomings in the process or program designs, including specific recommendations regarding alternative approaches or designs.
5. Participate in program design and planning discussion as may be required by the Companies.
6. Prepare a report summarizing the review and providing a third-party opinion regarding the sufficiency of the process and designs.

1.2. ICF's Approach

The review began with a kick-off meeting during which ICF and the Companies discussed and clarified the objectives of the project. ICF discussed its approach to the review and provided the Companies with a data request that outlined the materials ICF required to complete the review, including: the Companies' draft DSM filing; load forecasts; integrated resource plans (IRPs); DSM program modeling inputs and outputs; and relevant reports produced by the State of Kentucky, including Governor Beshear's Energy Strategy.

Our review consisted of both bottom-up and top-down approaches. From the bottom-up, we reviewed each of the Companies' proposed programs against program best practices from around the country. These program-level reviews focused primarily on program delivery (e.g. how programs are marketed, to whom incentives are paid, etc.), but also examined key program metrics for reasonableness (e.g. program costs are appropriate for this program given market maturity in Kentucky). The top-down review included an analysis of portfolio level metrics (e.g. kWh savings as a percentage of sales) against the Companies' peers, a gap analysis to identify potential lost savings opportunities, and a portfolio best practices analysis to determine whether the Companies' proposed DSM portfolio:

- Is cost-effective;
- Targets markets and technologies where the largest potential exists;
- Targets hard-to-reach markets;
- Has sufficient marketing and education budgets – incentives are only one aspect of a program;
- Is flexible enough to adapt to changing market conditions;
- Has an appropriate mix of proven and innovative programs;

- Has an appropriate mix of energy and demand programs; and,
- Has new and modified programs that were selected through an appropriate planning process.

1.3. Report Overview

The remainder of this report is organized into the following sections: Section 2: Regulatory and Policy Environment; Section 3: Best Practices; Section 4: Portfolio Review; Section 5: Program Reviews; Section 6: Overall Conclusions.

Additional description for each section is provided below.

Section 2: Regulatory and Policy Environment explains current federal and state policy with regards to energy efficiency. The current policies help explain the context in which this report was developed. This section also includes a summary of how the Companies are responding to policy shifts. As these policies evolve, and especially as federal climate change legislation moves closer toward regulatory certainty, the Companies will need to keep abreast of these developments, and re-evaluate programs and portfolios to ensure materiality, compliance, and effectiveness.

Section 3: Best Practices defines “best practice” generally as well as how it is used in this report. As noted previously, “best practice” is a subjective label that is context-sensitive. ICF believes that the reviews included in Section 5 should be viewed as a comparative exercise, with caution given to differences in the market, climate, and administration. For each program review, several suggestions as to how the Companies can continue to improve their programs through design and delivery adjustments are offered. In addition, suggestions relating to increased engagement with national program sponsors (such as the EPA), statewide agencies, and other local stakeholders, where applicable are included.

Section 4: Portfolio Review conducts a brief overview of the Companies’ complete DSM portfolio, including existing programs that were not subject to a best practice review. The portfolio is compared to its peers in the South, the Midwest, and the U.S. as a whole. In contrast with Section 3, this section contains a more quantitative comparison of portfolio savings and costs. This section also contains a discussion of regulatory treatment of program costs, and the impact of the portfolio on ratepayers.

Section 5: Program Reviews contains the reviews for enhanced existing and new programs. Each review begins by describing the Companies’ existing program and proposed enhancements, if applicable. The review then describes a selection of best practice programs, and compares the Companies’ programs using a variety of metrics. Finally, the review takes assessment of the differences, summarizes ICF’s conclusions, and, if necessary, offers suggestions as to how to incorporate these in the future.

Section 6: Overall Conclusions includes conclusions drawn from the introduction, and recaps the individual program conclusions and suggestions contained in Section 5.

2. Regulatory and Policy Environment

The market for energy efficiency is evolving quickly, and nowhere in the country is this more evident than in Kentucky. Since ICF's last review of the Companies' programs in 2007, both state and federal policies have shifted strongly in favor of energy efficiency. At the state level, this was driven by Kentucky Governor Steven Beshear, who has placed energy efficiency squarely at the top of his Seven Point Energy Strategy. At the federal level, this was driven largely by the passage of 2009 American Reinvestment and Recovery Act (ARRA, or "the Stimulus package"). ARRA outlaid about \$16.6 billion nationwide in energy efficiency and related investments; Kentucky is slated to receive over \$150 million during the three-year period spanning 2009-2011.

Below is a discussion of these and other policy shifts in greater detail, the implications for the Companies' programs, and the Companies' response to this changing political environment.

2.1. Federal

There were three major developments at the federal level since ICF reviewed the Companies' portfolio in 2007. Below, are highlights of key Federal developments that have the potential to impact the Companies' DSM programs.

1. *Under cap-and-trade scenarios in pending legislation, DSM should become more cost-effective for the Companies.* However, a specific cap-and-trade scenario is unlikely to be implemented until 2011, and possibly even later. Possible options include:
 - a. The American Clean Energy and Security (ACES) Act (H.R. 2454) was passed by the House of Representatives on June 26, 2009. ACES establishes a cap-and-trade program covering most U.S. greenhouse gas emissions (GHGs), a federal renewable electricity and energy efficiency standard (RES), new efficiency requirements, power plant performance standards, and other complementary measures. However, the Senate has not considered this bill and is unlikely to do so in the near future.
 - b. The Senate has two other bills under consideration. The first, the Clean Energy Jobs and American Power Act (S. 1733), introduced on September 30, 2009, contains most of the same provisions as ACES with a few changes and some strategic omissions. A modified version of this bill, known as the American Power Act, has been discussed but not formally introduced. The second, Carbon Limits and Energy for America's Renewal (CLEAR) Act (S. 2877), was introduced on December 11, 2009. This "cap-and-dividend" bill would tax carbon emitters and use the revenues to provide refunds to affected ratepayers. The first bill is considered more feasible, though the actual date of passage for either bill is uncertain, and unlikely to occur in the near future.
 - c. The EPA is moving forward with regulation of GHGs through the Clean Air Act (CAA), primarily through existing permitting rules that apply mostly to manufacturing facilities but also to some electricity generators. Future regulatory action by the EPA may be determined or limited by the Congress, such as legislation that would pre-empt the EPA from using the CAA to regulate GHGs.
2. *The Stimulus package provided unprecedented resources for energy efficiency and DSM nationwide.* The 2009 ARRA authorized about \$16.6 billion in energy efficiency

funding that qualifying public entities—primarily states, cities, and counties—could pursue. The primary objectives of this funding are to create jobs, save energy, and build clean energy (energy efficiency and renewable energy) infrastructure for the longer term. The Department of Energy’s (DOE) major allocations to Kentucky (over 2009-2011) include:

- a. \$70.9 million in Weatherization Assistance Program (WAP) funding;
- b. \$52.5 million in State Energy Program (SEP) funding;
- c. \$25.1 million in Energy Efficiency and Conservation Block Grants (EECBG); and,
- d. \$4.1 million in Energy Efficient Appliance Rebate Program funding.

In sum, this is approximately \$50 million in average annual funding for energy efficiency programs in Kentucky. In 2008, the *total* energy efficiency program spending in Kentucky was \$24 million.

3. *As compact fluorescent lamps (CFLs) become the baseline technology, obtaining cost-effective program savings will be more challenging.*¹ Federal lighting standards, including those for many popular lighting products like CFLs, will start to phase-in during 2012, which will diminish the impact of today’s efficient lighting technologies.

2.2. State

Governor Beshear made energy efficiency a top priority within his energy strategy, *Intelligent Energy Choices for Kentucky’s Future*. In this document, the governor set forth the following goal:

*Energy efficiency will offset at least 18 percent of Kentucky’s projected 2025 energy demand.*²

This amounts to reducing statewide energy consumption by an average of about 1 percent per year through 2025, an ambitious goal that would place Kentucky in the top tier of states in the Midwest and South in terms of DSM performance.

The governor’s overall plan proposes to enact a renewable and efficiency portfolio standard (REPS) that would be set at 25 percent of the state’s projected energy use in 2025. In addition to reducing projected emissions in 2025 by 50 percent, the REPS would also reduce emissions by 20 percent relative to the 1990 baseline. This aggressive goal surpasses the targets set by California’s AB 32 law (2020 emissions equal to 1990), and New England’s Regional Greenhouse Gas Initiative (2018 emissions 10 percent lower than 2009), and compares to the European Union’s Emissions Trading Scheme (2020 emissions 20 percent lower than 1990).

¹ The Energy Independence and Security Act of 2007 (the “Energy Bill”), signed into law by President Bush on December 18, 2007, requires all light bulbs use 30 percent less energy than today’s incandescent bulbs by 2012 to 2014. The phase-out will start with 100-watt bulbs in January 2012 and end with 40-watt bulbs in January 2014. By 2020, a Tier 2 would become effective, which requires all bulbs to be at least 70 percent more efficient (effectively equal to today’s CFLs).

² Governor Steven L. Beshear. *Intelligent Choices for Kentucky’s Energy Future*. November 2008. p. vi.

The governor's plan proposes that energy efficiency can be the primary method strategy to meet the REPS goal. Energy efficiency would offset 18 percent of the state's projected energy demand, with the remaining 7 percent coming from renewable energy and bio-fuels. In addition to the REPS that would apply to the state's utilities, the governor proposes that additional savings would result from aggressive energy savings targets for state government. The energy efficiency portion of the REPS would also include a comprehensive education, outreach, and marketing component by the state.

As a first step, the governor authorizes the Public Service Commission (PSC) to institute a proceeding that examines the impacts of an REPS. This proceeding will also identify cost-effective programs, and include recommendations for implementing them. The governor also encourages and authorizes the PSC to commit greater resources to DSM, including rules that would require the utilities to implement best practice programs, standardization of the rules regarding industrial customer opt-outs, and an increased focus on the evaluation of DSM programs. As a longer term action item (four to seven years from the plan's inception), the governor also encourages the PSC to work with the utilities on a smart grid policy.

2.3. How Is LG&E / KU Responding to State and Federal Policy Shifts?

2.3.1. Energy Efficiency is a Priority for the Companies' Upper Management

Commensurate with federal and state policy agendas, the Companies have made energy efficiency a high priority in their corporate strategies. In 2008, the Companies appointed a new Customer Energy Efficiency Management team, including a new director and two new department managers. The Companies also hired four additional program managers to manage new programs, and three new researchers/program analysts. These human resource investments represent a significant commitment to energy efficiency that will leave the Companies well-positioned to successfully grow their DSM portfolio in the future.

The Companies are also developing a DSM portfolio that is consistent with many of the specific actions outlined in the Governor's plan. By undertaking this review, the Companies are committed to incorporating best practices into their programs. In addition, with the new programs, the Companies are addressing the potential for energy efficiency in both the mass market and in targeted end uses.

2.3.2. LG&E / KU's Portfolio Is Growing and Diversifying

Table 1 and Figures 1-3 below help illustrate the recent evolution of the Companies' DSM portfolio.

- Column *b* in Table 1, "Target Sectors(s)" indicates the Companies' designations of the target market(s) for the programs in column *a*.
- Column *c*, "Program Status" includes:
 - Existing programs – Programs currently administered by the Companies that are not being modified substantially and re-filed in their DSM Plan;

DSM Program Review
Regulatory and Policy Environment

- Enhanced programs - Programs currently administered by the Companies that are being modified substantially and re-filed in their DSM Plan; and,
- New programs that the Companies are proposing in their DSM Plan.
- Column *d* is an ICF-designated program label. Column *d*, "Program types," includes:
 - Resource acquisition – Programs designed primarily for the purpose of implementing efficiency measures in the marketplace;
 - Education and/or marketing – Programs designed primarily to educate the public about the Companies' DSM offerings, other efficiency programs (i.e. State and Federal), and energy efficiency, generally; and,
 - Low income – Programs that implement efficiency measures, but for which only qualified low income households are eligible.
- Column *e* is also an ICF-designated program label. Column *e*, "Risk/innovation," includes designations, based on ICF's professional judgment of the investment risk and degree of innovation in design, delivery, and technologies associated with each program. A risk/innovation designation of *low/low* means that on the risk side, the program is a very safe investment because the program is well-understood and is a proven design that has become a best practice by performing successfully (cost-effectively) in a variety of jurisdictions. On the innovation side, *low* means that the design, delivery, and technologies that comprise the program are widely understood and used successfully in programs in most jurisdictions.

Conversely, a risk/innovation designation of *high/high* means on the risk side there is considerable uncertainty about the program's performance, either because the program has not been implemented before, or if it has, there is very little science or evaluation around program savings. On the innovation side, this means the program will employ delivery methods, technologies, or both that are novel, or at least whose performance is not well understood, but also have the potential (based on theory or pilot studies) to achieve significant savings levels.

DSM Program Review
Regulatory and Policy Environment

Table 1: Existing, Revised, and New LG&E / KU Programs (“The Portfolio”)

a	b	c	d	e	f	g
Program	Target Sector(s)	Program Status	Program Type	Risk/ Innovation	Year 1 Budget	Year 1 Savings (MWh)
Residential High Efficiency Lighting	Residential	Existing	Resource Acquisition	Low/Low	\$3,416,046	65,150
Residential New Construction	Residential	Existing	Resource Acquisition	Med/Low	\$1,102,635	2,297
Residential HVAC Tune Up	Residential	Existing	Resource Acquisition	Low/Med	\$487,332	1,072
Commercial HVAC Tune Up	Commercial	Existing	Resource Acquisition	Low/Med	\$411,778	1,942
Customer Education & Public Information	Res. and Com.	Existing	Education and/or Marketing	Med/Low	\$3,296,660	0
Dealer Referral Network	Res. and Com.	Existing	Education and/or Marketing	Low/Med	\$152,056	0
Residential Responsive Pricing (RRP)	Residential	Existing	Resource Acquisition	Med/High	\$125,000	0
Program Development & Administration	Res. and Com.	Revised	Program Development & Admin.	Low/Low	\$1,260,457	0
Residential Conservation (HEPP)	Residential	Revised	Resource Acquisition	Med/Med	\$1,460,826	2,948
Residential Load Management	Residential	Revised	Resource Acquisition	Low/Low	\$6,186,874	1,868
Commercial Load Management	Commercial	Revised	Resource Acquisition	Low/Low	\$321,821	107
Residential Low Income Weatherization	Residential	Revised	Low Income	Low/Low	\$2,368,462	2,632
Commercial Conservation/Incentives	Commercial	Revised	Resource Acquisition	Low/Low	\$3,255,400	54,988
Smart Energy Profile	Residential	New	Resource Acquisition	Med/High	\$1,370,800	29,664
Residential Refrigerator Removal	Residential	New	Resource Acquisition	Low/Low	\$815,800	3,000
Residential Incentives	Residential	New	Resource Acquisition	Med/Low	\$1,567,352	8,544
Total					\$27,599,300	174,211

Figure 1 illustrates the distribution of the Companies’ Year 1 portfolio budget across program status categories. Eighty six percent (86%) of the budget is earmarked for programs the Companies are currently operating, including existing and revised programs. The revised programs include program enhancements that the Companies believe will improve program performance, either because the Companies received feedback on the program through formal evaluation, or because after some time in the market, program staff sees opportunities that the current program is not capturing. By adapting to the marketplace through the modification of existing programs and making forays into the marketplace with new programs, the Companies demonstrate that they are seeking to improve and grow the portfolio.

Figure 1: Distribution of Year 1 Program Spending, by Program Status

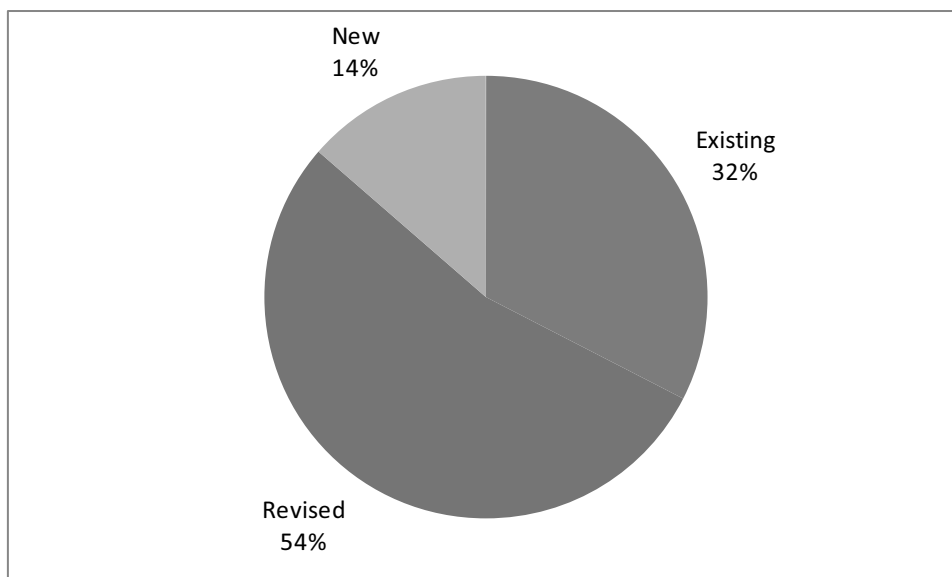


Figure 2 illustrates that the Companies will spend a large majority of their budget in Year 1 on programs designed primarily to acquire savings. It is important to note that this figure does not show the full extent of the Companies' planned marketing budget; each program budget includes funding for marketing and education activities.

Figure 2: Distribution of Year 1 Program Spending, by Program Type

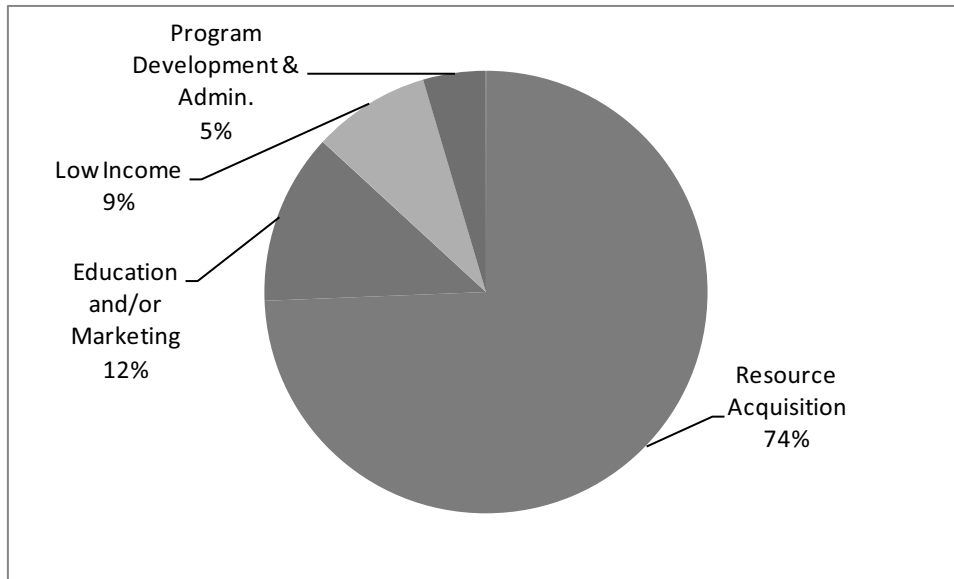
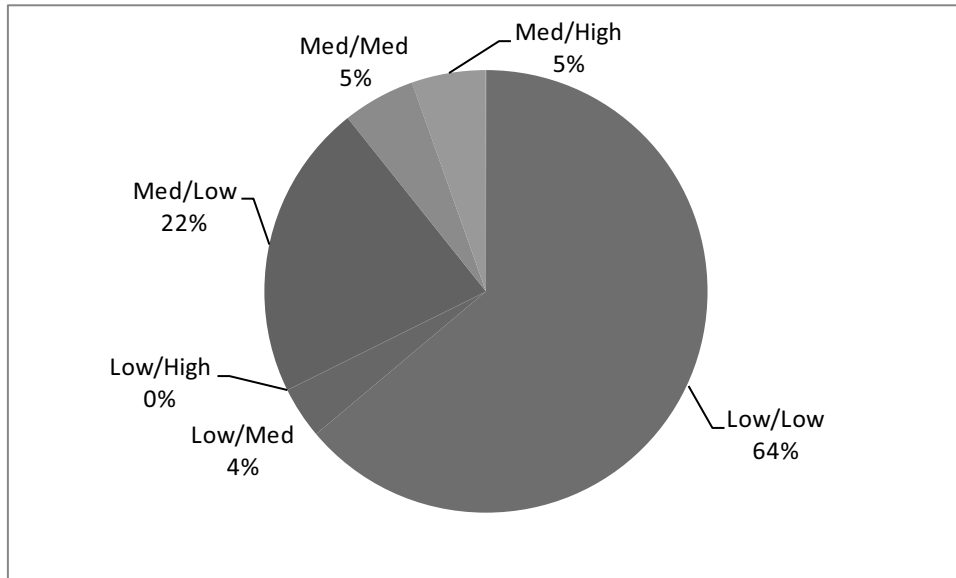


Figure 3 illustrates that the Companies' Year 1 portfolio is largely a low-risk investment, though the portfolio also includes some more innovative, though riskier elements. Overall, ICF believes that the Companies' proposed Year 1 portfolio is a relatively conservative investment that strikes an appropriate balance between low-risk programs that are well-understood (e.g. Residential HVAC-Tune Up and Commercial Conservation Rebates) and programs that have some innovative elements and are more forward looking (e.g. Smart Energy Profile and Residential Responsive Pricing), but are also more risky in that program performance is more uncertain. ICF does not characterize any of the Companies' programs as being a high risk investment.

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Figure 3: Distribution of Year 1 Program Spending, by Risk/Innovation Category



3. Best Practices

3.1.1. Defining Best Practice

Energy efficiency program *best practice* is much more a term of art than science; there simply is too much variability across objectives, regulatory structures, and program types to enable simple broad conclusions about what is *best*. Typically, best practice is considered a function of program result, such as whether the program met or exceeded its objectives. An alternative view of best practice focuses on the design and execution of essential program elements, such as marketing, service delivery, program back office efficiency, etc. For example, though a particular program might not have delivered particularly strong results overall, certain elements of its structure, such as incentive fulfillment, might be considered best-in-class. Alternatively, while difficult, it is not unheard of for a program based on inefficient or flawed processes to nevertheless deliver outstanding results.

Best practice should be viewed partly as a function of the experience of the program administrator and implementer. What is best practice for a utility that has been designing and managing programs for two decades will be different in some cases from what should be viewed as best for an organization just entering the field. For example, ICF could not find one program *exactly* comparable to the Companies' proposed Residential Rebates program, but this is only because the Companies are packaging particular elements of their residential portfolio differently than other utilities. The programs that are often cited as best practice in other states (including California, New York, Oregon, Texas, Vermont, and Wisconsin) package some aspects of their portfolios in radically different ways. Although the Companies should look to these best practice states for ideas, ultimately the Companies must design a package that works best in *their own* markets.

In general, best practice programs and portfolios seek to achieve each of the following goals:

- **The programs are cost-effective.** Although cost-effectiveness can be defined in several ways, the most common method for investor-owned utilities to use is based on the California Standard Practice Manual tests. The manual contains four tests, the most comprehensive of which is the Total Resource Cost test. This test compares the net present value (NPV) of benefits (energy and demand savings multiplied by the value of avoided energy costs), with the NPV of costs (utility program costs and program participants' costs) over the lifetime of the implementation of DSM programs. If the benefit-cost ratio is greater than or equal to one (1.00), then the program provides a net benefit to the utility's ratepayers.
- **The portfolio covers hard-to-reach markets.** The portfolio must include programs that are targeted toward hard-to-reach segments, which typically include low-income and small commercial customers. Both of these customer segments face additional barriers to participation in DSM programs, including the *split incentive*. This term signifies the case where a customer would benefit from a lower utility bill but often lacks the authority to install energy-saving equipment in his leased residence or place of business.
- **Program budgets are sufficient to deliver the programs effectively to market.** Program budgets must be constructed to offer market-based incentives that will result in the expected level of participation. In addition, the budget should reflect any necessary increase of internal staffing or the use of an implementation contractor, and sufficient budgets for non-incentive and non-implementation costs (see below). In addition, program budgets should be monitored or adjusted annually to prevent over- and under-subscription of program funds.

- **Programs have sufficient budgets for marketing, training and education (market transformation activities).** A program that contains adequate funding for these activities can help customers and trade allies overcome the information barrier that is typical of energy efficiency investments. In addition, funds spent on information-related initiatives can pay dividends in the long term, when market transformation begins to take effect.
- **The portfolio strikes an appropriate balance of less risky, proven program types, and more innovative programs.** A less mature market would require more proven program types that have been implemented throughout the country, such as lighting and HVAC programs in both the residential and commercial sectors. Over time, as the market matures and savings potential decreases, new and innovative programs can be implemented. These programs can often develop from prior pilot programs or information initiatives, and can be co-marketed with proven program types.
- **The portfolio is flexible enough to adapt cost-effectively to changing market conditions.** A flexible and broad portfolio design will target all customer segments, and include a variety of program types (including rebates, direct install, demand response incentives, etc.) and energy efficiency measures (retrofit, replace-on-burnout, or new). This will ensure that economic conditions that negatively impact one customer segment will not affect the entire portfolio.
- **Evaluation, Measurement and Verification (EM&V) is budgeted for and the Companies have plans to have programs evaluated on a regular basis.** An adequate EM&V budget that results in timely process and impact evaluations should result in a feedback loop that validates program results and helps inform long-term program adjustments and design.

4. Portfolio Review

Portfolio Review Criteria	Summary Review
Intelligent Energy Choices for Kentucky's Future	
Programs will make progress toward the goal of reducing energy consumption in Kentucky by at least 18 percent below currently projected 2025 energy consumption.	Yes. The Companies' proposed portfolio savings are projected to achieve more than 0.5 percent of annual sales in Year 1. Greater savings levels may be achieved through the introduction of additional program targeting the commercial sector.
Industry Best Practice	
Programs are cost effective.	Yes. The portfolio is cost-effective from the perspective of all ratepayers (based on the results of the TRC test), the utility (based on the results of the UCT test), and program participants (based on the results of the Participant Test). Vis-à-vis the generation alternative, this portfolio will have a lower impact on customer rates over the long-term, based on the results of the UCT test.
The portfolio covers hard-to-reach markets.	Yes. The WeCare program, which targets low income customers, represents 9 percent of the total portfolio budget, increasing to 20 percent by Year 7. Further, there are a variety of other offerings that help make efficiency investments more affordable to low income customers and small businesses, including the Companies' Residential High Efficiency Lighting program, the Commercial Conservation program, and the Commercial Load Management program.
Program budgets are sufficient to deliver the programs effectively to market.	Yes. The Companies' programs are adequately sized. The programs include the necessary funds both for incentive and implementation costs. In addition, funding is consistent from year to year, which ensures program success.
Programs have sufficient budgets for marketing, training and education (market transformation activities).	Yes. The budget contains line items for each of these cost types.
The portfolio strikes an appropriate balance of less risky, proven program-types, and more innovative programs.	Yes. The Companies have a generally conservative approach to portfolio planning that is appropriate given that the market is fairly immature. Nonetheless, the Companies are making forays into more innovative, albeit more risky programs, which have the potential to capture high energy savings. This includes the social marketing-based program <i>Smart Energy Profile</i> . As a result, the Companies will be well-positioned to implement cutting-edge programs as their advanced metering infrastructure moves from planning to deployment.

**DSM Program Review
Portfolio Review**

Portfolio Review Criteria	Summary Review
The portfolio is flexible enough to adapt cost-effectively to changing market conditions.	Yes. One example of this is that 54 percent of the Companies' Year 1 budget is for existing programs that are being modified based on evaluations and/or the Companies' experience. The Companies have built flexibility into their program designs and is adapting programs to changing market conditions.
EM&V is budgeted for and the Companies have plans to have programs evaluated on a regular basis.	Yes. In the past, the Companies have had their programs evaluated on a regular basis, and have cancelled or adapted programs based on feedback from evaluators. Program budgets include EM&V.

4.1. Benchmarking Costs and Savings

The Companies' projected program costs and savings compare favorably to the rest of the country. Table 2 below compares the Companies' overall cost of savings, expressed in dollars per first year kWh, are projected to be less expensive than the median cost of savings achieved by program administrators in the South, the Midwest, and the U.S. as a whole.

The level of savings achieved by the Companies, expressed as a percentage of annual kWh sales, also exceeds that of their peers.³ In Year 1, the Companies' projected programs savings will equal nearly 0.5 percent of annual sales, which is a significant step toward achieving the governor's savings goal.

Table 2: LG&E / KU's Energy Portfolio Performance versus the South, Midwest, and U.S. Median

Portfolio Metric	LG&E / KU Year 1	LG&E / KU Year 3	LG&E / KU Year 5	Southern Region Median (2008) ^a	Midwest Region Median (2008) ^a	U.S. Median (2008) ^a
\$ per 1st year kWh	\$0.16	\$0.19	\$0.17	\$0.89	\$0.47	\$0.33
Annual kWh savings as % sales	0.5%	0.5%	0.5%	0.1%	0.1%	0.4%

^aU.S. EIA Form 861 Data (2008); Program Administrator spending; \$1 million or more annually on DSM programs.

In addition, the level of savings achieved by the Companies, expressed as a percentage of annual kW peak demand, also exceeds that of their peers. The benchmarking study cited below was composed primarily of Midwest utilities; LG&E / KU's cost per kW, due to its successful demand response programs, is also lower than its peers.

³ 2008 is the most recent year for which EIA Form 861 data is available.

Table 3: LG&E / KU's Demand Portfolio Performance versus Benchmarking Study

Portfolio Metric	LG&E / KU Year 1	LG&E / KU Year 3	LG&E / KU Year 5	Bench- marking Median (2007) ^b
\$ per 1st year kW	\$566	\$682	\$605	\$836
Annual kW savings as % demand	0.7%	0.8%	0.8%	0.6%

^bSummit Blue DSM Benchmarking Study. Greater Impacts at Reasonable Costs. ACEEE Summer Study, 2008

Portfolio-level metrics are a useful way to ensure that portfolio planning estimates are comparable to benchmarking and best practice studies. However, since the program mix in utility portfolios is dependent on numerous factors, including the level of market maturity, generation costs, and customer receptivity, caution should be exercised when attempting to compare a portfolio with best practice. Instead, a high-level portfolio view should be used in concert with more detailed views of individual programs.

4.2. Program Spending, by Sector

One way for the Companies to achieve even greater savings levels in the future is to target a greater percentage of their program spending on the commercial sector. Table 4 below shows estimated electricity consumption in the Companies' territories, by sector (excluding industrial), as well as projected DSM program spending levels and program costs. Residential customers consume approximately 50 percent of electricity but residential program spending is about 86 percent of total DSM program spending between Years 1 and 7.

ICF's experience is that allocation of program spending by sector is a complicated and highly political issue in most jurisdictions. Utility commissions and program administrators must balance the need to meet aggressive state savings goals against other policy priorities, including the need to target hard-to-reach populations (e.g. low income customers and small businesses), as well as the interests of ratepayer advocates, environmental organizations, the State Attorney General, and others. The Companies' proposed spending by sector may be entirely appropriate given Kentucky's political economy; however, strictly from the standpoint of potential energy savings, greater program spending on the commercial sector should result in higher-than-projected savings for the Companies. Additional spending on the commercial sector would also be cost-effective, as commercial programs tend to be less expensive than residential programs because businesses have the needs and means to make larger DSM investments than residential customers.

In discussing this topic with the Companies' staff, ICF learned that the Companies do recognize the potential within the commercial sector and, in the future, may file additional programs targeted at commercial customers. The Companies would prefer to wait and launch these programs once they have a better understanding of the local commercial market; currently the Companies are conducting such research. ICF believes that this is a reasonable strategy that is generally consistent with a conservative planning approach common for utilities that are running relatively new programs in immature markets. Such an approach helps mitigate risks to the Companies and their ratepayers, and helps ensure the long term success of the portfolio.

**DSM Program Review
Portfolio Review**

Table 4: Energy Consumption, Program Spending, and Program Costs, by Sector⁴

KU Customer Sector	Estimated Consumption, 2009 (GWh)		LG&E Customer Sector	Estimated Consumption, 2009 (GWh)		LG&E / KU Estimated Consumption, 2009 (GWh)		Sector	LG&E / KU Proposed Spending on DSM Programs (\$M, Years 1-7)		LG&E / KU Avg Cost of Savings (\$/kWh, Years 1-7)
Residential	6,353	53%	Residential	4,254	49%	10,607	51%	Residential	\$218	86%	\$0.21
General Service	1,835	15%	General Service	1,456	17%	3,291	16%	Commercial	\$36	14%	\$0.09
Large Power Service	3,910	32%	Large Commercial	2,980	34%	6,890	33%				
Total	12,098			8,690		20,788		Portfolio	\$254		\$0.18

Sources:

KU Elec - DSMRC Filing, 12-08

LG&E Elec - DSMRC Filing, 12-08

LG&E / KU Draft DSM Expansion Filing, 1-11

4.3. Regulatory Treatment of Program Costs

The state of Kentucky's cost recovery mechanism is consistent with best practice, in that it includes program cost recovery and lost revenues recovery. However, the Companies must still prove that a DSM portfolio is cost-effective, which can be difficult when avoided costs are low. Similarly, customers' willingness to participate in energy efficiency program is lessened when retail rates are low, leading to longer payback periods. As demonstrated throughout this document, the Companies continue to offer cost-effective programs to each segment of the customer base. The Companies should continue to review best practice programs and look for new and innovative methods of program design and delivery that are still cost-effective.

In addition to a cost recovery mechanism, the establishment of mandatory savings or budget goals is another method that can ensure sufficient and stable funding for DSM programs. Some states, including Minnesota and Wisconsin, set a requirement that a certain percentage of sales or revenue determine the savings target or the total budget. Other states, including California and Vermont, use historical performance to set three-year budgets (which increase for each cycle) for DSM programs. Though Kentucky's utilities are not yet required to reach a savings or budget target, the governor's goal to offset at least 18 percent of the state's 2025 energy demand will necessitate consistent DSM investment and enable the Companies to set long-term DSM planning goals. The Companies should continue to work with the PSC to reach regulatory certainty and ensure their DSM investments will count toward any statewide or legislative goals.

4.4. Ratepayer Impact

ICF contends that the Companies' proposed DSM investment will have smaller impacts on customer bills than additional customer electricity use. This is illustrated by the Utility Cost Test (UCT) results for the Companies' portfolio, which are well above 1.00 (the overall ratio is 3.39). The UCT compares the costs of DSM programs incurred by the utility ("costs") against avoided costs of energy and demand ("benefits"). If the UCT Benefit-Cost (BC) ratio is greater than one, this means that the DSM program is less expensive than, and therefore a better deal to all ratepayers, than the generation alternative.

⁴ Does not include the Industrial sector.

Some interveners, stakeholders, and utility commissioners contend that the Ratepayer Impact (RIM) test is the appropriate indicator of program cost-effectiveness when considering the impact of DSM investments on customers. If the RIM test BC ratio is less than 1.00, then it is likely that utility rates will increase in the short-term, either through a cost recovery factor or through a rate case, especially for non-participants. The RIM test's main advantage over other standard measures of DSM cost-effectiveness is that it is the only test that reflects revenue shifts. However, the RIM test also has serious disadvantages; as stated in the California Standard Practice Manual (CSPM):

Results of the RIM test are probably less certain than those of other tests because the test is sensitive to the differences between long-term projections of marginal costs and long-term projections of rates, two cost streams that are difficult to quantify with certainty.⁵

The other cost-effectiveness test ratios, including the Participant (PCT) test and the Total Resource Cost (TRC) test, show easily the benefits to program participants, and all ratepayers as a whole. The PCT test results for the portfolio are 8.24, showing that for each dollar that is spent on energy efficiency improvements, the participant will receive more than eight times as many benefits, through bill reductions and program incentives. Even when excluding the high PCT ratios from the existing programs, participants will still receive significant benefits from participating in the enhanced Residential and Commercial Conservation/Rebates programs.

The TRC test results for the portfolio are 3.01; this shows that for each dollar that is spent by both participants and utilities, they will receive about three times as many benefits through avoided energy costs. The TRC test (or a variation of it, the Societal Cost Test) is the primary cost-effectiveness test used in most jurisdictions, with the UCT commonly used as a secondary cost-effectiveness test.

Because the programs easily pass the TRC and UCT, and participants gain significant benefits from the programs, the Companies should continue to design and market the programs broadly, in order to increase participation and minimize the number of non-participants. The Companies should also monitor the RIM test and PCT BC ratios for cost-effectiveness; they should also use these test results with caution, and should not judge the value of individual programs using these tests exclusively.

Table 5: Benefit-Cost Ratios, by Cost-Effectiveness Test

Cost-Effectiveness Test	Benefit-Cost Ratio
TRC	3.01
UCT	3.39
RIM	0.82
PCT	8.24

⁵ California Public Utilities Commission. California Standard Practice Manual for the Economic Analysis of Demand-Side Programs and Projects. October 2001. p. 15.

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5. Program Reviews

The following enhanced existing, and new programs were reviewed and compared with comparable best practice programs:

The enhanced existing programs reviewed were:

- Residential Load Management Program
- Commercial Load Management Program
- Commercial Conservation/Commercial Incentives Program
- Residential Conservation/Home Energy Performance Program
- Residential Low Income Weatherization Program (WeCare)

New programs reviewed were:

- Smart Energy Profile
- Residential Incentives
- Refrigerator Removal Program

5.1. Expanded Programs

5.1.1. Residential Load Management

Description of the Companies' Program

The Companies' Load Management program utilizes one-way radio load control switches and thermostats to cycle off residential and small commercial customers' central air conditioner (CAC) and other systems during system peak times to reduce demand usage. The equipment is controlled (or cycled off) about 30 to 45 percent of each peak event. In exchange, participants who choose the switch option receive free installation of the equipment, and an annual bill credit. Participants who choose the thermostat option do not receive a bill credit incentive.

Under this program modification, the Companies are requesting the flexibility to increase the annual bill credit for CAC units for electric water heaters and pool pumps. To estimate cost-effectiveness, the Companies have proposed annual bill credit increases in Years 2 and 4; the actual increase will be determined in the future based on numerous factors. Participants who choose the thermostat option would continue to receive no annual incentive. The Companies are also proposing, beginning in Year 1, a one-time install bonus to new participants, increasing by \$5 every two years. The Companies are proposing to increase the financial incentives to help increase participation compared to prior years, which has been less than half of the planned goals.

Components of Best Practice Programs

The following are components of best practice load control programs⁶:

- Multiple equipment options, such as one-way switches and two-way thermostats
- Multiple cycling options and durations
- Bill credits commensurate with reduction
- Targeting of high-use residential customers
- If applicable, incorporation of critical-peak pricing element or real-time pricing
- Monitoring of load impacts and use of interval data

Summary of Best Practice Programs

The We Energies Energy Partners program utilizes a one-way load control switch for residential customers' CAC systems. Participants can choose among three cycling options, with varying durations, with no limit to the number of events per year. The participant would receive either a \$40 annual incentive for continuous cycling of four hours, or \$50 for six hours, per day. The third option is a \$12 annual incentive for 45 minutes cycling off and 15 minutes cycling on per hour, for up to eight hours per day. Participants can receive up to two switches per household; however, they would receive only one bill credit.

⁶ Adapted from <http://www.peaklma.com/files/public/CustomerPrinciples.pdf>.

We Energies has received approval to introduce new equipment and cycling options in order to expand the Energy Partners program by doubling the number of participants to 60,000 by 2012. The utility plans to introduce smart thermostats, in order to give participants additional control and allow them to override the utility signal. In addition, the utility plans to offer two new cycling options based on a 50 percent control strategy. Incentives for the three existing options will increase to between \$50 and \$80 per year. The utility also plans to target high-use residential users, in order to increase the demand reductions per participant.

The Energy Partners program expansion seeks to achieve greater participation goals through the adoption of best practice techniques. The use of a smart thermostat may attract new participants who otherwise would not have participated. In the future, the smart thermostat may also allow the utility to introduce real time pricing into the program. In addition, the introduction of new cycling options may also attract new participants, and give the utility more flexibility regarding demand reductions during events.

Southern California Edison's (SCE) Summer Discount Program (SDP) utilizes a one-way load control switch for residential and small commercial customers' CAC systems. For both residential and small commercial customers, SCE offers two cycling options and two incentive options, for a total of four program options. The cycling options consist of 50 percent and 100 percent; the two incentive options are Base and Enhanced. In the Base option, SCE is allowed to conduct a maximum of 15 load control events, with each event lasting up to six hours. In the Enhanced option, SCE is allowed to conduct an unlimited number of six-hour load control events. The participant would then choose one cycling option and one incentive option. Participants are eligible for up to \$200 in bill credits per year.

The SDP incentives structure seems proportionate to the commitment required by the participant and the benefit to the utility, consistent with the best practice program components listed above. The SDP's incentives are more than three times higher for the 100 percent cycling option than for the 50 percent cycling option. Also, the Enhanced option incentives are twice as much as the Base option incentives. In addition, the incentive structure is based on system size, which rewards participants who achieve greater demand reductions. The varying incentive may also encourage the participation of high-use customers, who can then receive a bill credit that is among the highest in the country. Similarly, SCE incurs lower program costs by limiting incentive payments to participants whose system sizes are smaller than average.

**DSM Program Review
Program Reviews**

Table 6: Residential Load Management Program Comparison

Program Element/ Metric	LG&E / KU	Best Practice Program: Less Mature Market	Best Practice Program: More Mature Market
		We Energies, Energy Partners Program Start Year: 1992	Southern California Edison, Summer Discount Plan Program Start Year: 1985
Program Objective(s)	Reduce peak demand, and delay the need for new generation	Provide reliable and cost-effective demand response	Provide reliable and cost-effective demand response
Target Market(s)	Residential single family homes	Residential single family homes	Residential single family homes
Market Penetration (annual)	Currently at 19%, increasing to 25% by Year 3	Estimated at 3%	Estimated at 13%
Measures Types (continuing)	One way switches and thermostats for CAC and other appliances	One way switch for CAC	One way switch for CAC
Measures Types (new)	One way switches and thermostats for CAC and other appliances	Smart thermostat	One way switch for CAC
Incentive Structure	<ul style="list-style-type: none"> • \$20 bill credit per customer per CAC unit, flexibility to increase to \$40 in Year 4 • No bill credit for thermostat option • \$8 bill credit per customer per electric water heater/pool pump, flexibility to increase to \$16 in Year 4 • Proposed install bonus 	Ranges from \$20 to \$80 per year, depending on cycling strategy, size of AC unit, and choice of number of events per season	Ranges from 5 to 18 cents per day per AC system size in tons, depending on cycling strategy, size of AC unit, and choice of number of events per season
Marketing	Traditional marketing efforts through direct mail, website, bill inserts, and other activities and events	Targeting of high-use customers, in addition to traditional marketing efforts through direct mail, website, bill inserts, and other activities and events	Traditional marketing efforts; Use of targeting to high-use customers is unknown
Delivery	LG&E / KU handles marketing, and monitoring of load impacts; Implementation contractor handles all other program activities, including equipment installation, maintenance, and repair, and auditing and verification	Through an implementation contractor, which handles all activities (marketing, equipment installation, maintenance, and repair, auditing and verification, data tracking, monitoring of load impacts), except the call center	SCE handles marketing, recruitment, and call center; Implementation contractor handles all other program activities

Discussion of the Companies' versus Others' Programs

Overall, the Companies' Load Management program compares favorably to best practice load control programs. Equipment costs correspond to what is available in the market, and program costs are comparable to best practice programs. In addition, the program contains features, such as the control of multiple customer appliances, which set it apart from other programs. A comparison of savings and cost-effectiveness is more difficult due to the disparity in retail rates, avoided costs, and system peak demand between the Companies and their peers. However, ICF concludes the Companies are expanding the program correctly by increasing incentives in order to increase participation and savings and decrease program costs.

Conclusions

ICF suggests the Companies consider the following implementation strategies in the future:

1. In addition to increasing the incentives, structure the incentives based on system size, in order to reduce payments to participants with smaller CAC systems. This could also encourage customers with larger system sizes to participate in the program.
2. Target high-use residential customers, similar to what We Energies is planning to do. This could decrease the program's marketing costs per participants, as well as identify customers for participation in other programs.
3. Introduce other best practice techniques, such as the introduction of real-time pricing. The availability of real-time pricing data to the participant would be akin to a price response program, and would allow for greater participant control during an event. The Companies would be able to increase participation by promoting multiple control options to participants.

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Program Reviews**

Table 7: Residential Load Management Program Results Comparison

Program Element/ Metric	LG&E / KU		Best Practice Program: Less Mature Market	Best Practice Program: More Mature Market
	Year 1	Year 3	We Energies, Energy Partners 2009–2011	Southern California Edison, Summer Discount Plan 2009
Annual Energy Savings MWh	5,923	12,860	N/A	N/A
Annual Demand Reduction kW	145,000	172,000	39,000	639,800
Annual Incentive Costs	\$2,260,700	\$4,266,834	\$3,000,000	N/A
Annual Non-Incentive Costs	\$3,926,175	\$5,734,218	\$9,748,220	N/A
Annual Budget	\$6,186,874	\$10,001,052	\$12,748,220	\$59,106,954
Participants	131,000	157,000	30,000	343,107
kWh/Participant	45	82	N/A	N/A
kW/Participant	1.1	1.1	1.3	1.9
% Budget Incentive Costs	37%	43%	24%	N/A
% Budget Non-Incentive Costs*	63%	57%	76%	N/A
% Budget EM&V	18%	16%	2%	N/A
\$/1st Year kWh	\$1.04	\$0.78	N/A	N/A
\$/1st Year kW	\$43	\$58	\$327	\$92
Cost/Participant	\$47	\$64	\$425	\$172
NTG Ratio	1.00	1.00	0.72	N/A

*Includes % EM&V costs

Source(s): We Energies filing, WI PSC website, Docket 05-UR-103

SCE filings, CA PUC website, Proceeding A0806001

5.1.2. *Commercial Load Management*

Description of the Companies' Program

The Companies' Load Management program utilizes one-way radio load control switches and thermostats to cycle off residential and small commercial customers' central air conditioner (CAC) and other systems during system peak times in order to reduce demand usage. The equipment is controlled (or cycled off) about 30 to 45 percent of each peak event. In exchange, participants who choose the switch option receive free installation of the equipment, and an annual bill credit. Participants who choose the thermostat option do not receive a bill credit incentive.

Under this program modification, the Companies are requesting the flexibility to increase the annual bill credit for CAC units for electric water heaters and pool pumps. To estimate cost-effectiveness, the Companies have proposed annual bill credit increases in Years 2 and 4; the actual increase will be determined in the future based on numerous factors. Participants who choose the thermostat option would continue to receive no annual bill credit. The Companies are also proposing, beginning in Year 1, a one-time install bonus to new participants, increasing by \$5 every two years. The Companies are proposing to increase the financial incentives in order to increase participation compared to prior years, which has been less than half of the planning goals.

Components of Best Practice Programs

The following are components⁷ of best practice load control programs:

- Multiple equipment options, such as one-way switches and two-way thermostats
- Multiple cycling options and durations
- Bill credits commensurate with reduction
- Door-to-door recruitment of small commercial customers
- If applicable, incorporation of critical-peak pricing element or real-time pricing
- Monitoring of load impacts and use of interval data

Summary of Best Practice Programs

Both best practice comparison programs operate in the same market, California; however, the state's three investor-owned utilities (IOUs) and two largest municipal utilities have designed their direct load control programs differently. Pacific Gas & Electric (PG&E) has only been operating its current direct load control programs since 2007. PG&E's SmartAC program is targeted mostly to the residential sector (the share of small commercial customers is less than 1 percent) and is being co-marketed with SmartRate, a critical peak pricing tariff, using its recently installed smart meter technologies. Sacramento Municipal Utility District (SMUD) runs a best practice direct load control program that is open to residential customers only, while the Los Angeles Department of Water and Power (LADWP) does not run any direct load control programs.

⁷ Adapted from <http://www.peaklma.com/files/public/CustomerPrinciples.pdf>.

San Diego Gas & Electric (SDG&E), which can be thought of as the less mature market, has only been operating its program since 2005. It has achieved a much larger share of small commercial customers due to its unique marketing approach. Southern California Edison (SCE), which can be thought of as the more mature market, has operated its program since 1985. The program has a high penetration rate in the residential sector, and a more modest penetration rate in the small commercial sector (though, with higher kW savings per participant). Although the Kentucky market has fewer system peak demand issues than California, there are some direct load control program design options that the Companies could incorporate into their programs.

SDG&E's Summer Saver program utilizes a one-way control switch for residential and small commercial customers' CAC systems. For small commercial customers, SDG&E offers two cycling options, 30 percent and 50 percent. The duration of each event is between two to four hours, with an annual maximum of 15 event days.

The Summer Saver program is SDG&E's entry into the load control market, and offers a simple design and incentive structure to small commercial customers. Since the program's initiation in 2005, it has recruited more than 5,000 small commercial participants for an estimated participation level of nearly 7 percent. SDG&E and its implementation contractor, Comverge, have undertaken traditional, as well as unique, marketing efforts, including door-to-door recruitment, and outreach to a variety of community groups. Although the number of programs that include small commercial customers is few, SDG&E has achieved a penetration rate that is higher than the direct load control programs for fellow California IOUs SCE and PG&E.

SCE's Summer Discount Program (SDP) utilizes a one-way load control switch for residential and small commercial customers' CAC systems. For small commercial customers, SCE offers three cycling options and two incentive options, for a total of six program options. The cycling options consist of 30 percent, 50 percent and 100 percent; the two incentive options are Base and Enhanced. In the Base option, SCE is allowed to conduct a maximum of 15 load control events, with each event lasting up to six hours. In the Enhanced option, SCE is allowed to conduct an unlimited number of six-hour load control events. The participant would then choose one cycling option and one incentive option. Participants are eligible for up to \$200 in bill credits per year.

The SDP incentives structure seems proportionate to the commitment required by the participant and the benefit to the utility, consistent with the best practice program components listed above. The SDP's incentives are nearly three times higher for the 100 percent cycling option than for the 50 percent cycling option, which are in turn five times higher than the 30 percent cycling option. Also, the Enhanced option incentives are twice as much as the Base option incentives. The inclusion of the 30 percent cycling option, which is known as the "Maximum Comfort" option, can provide an entry for new and/or hesitant participants. In addition, the incentive structure is based on system size, which rewards participants who achieve greater demand reductions. The varying incentive may also encourage the participation of high-use customers (considering that the average reduction per participant is 11.4 kW), who can then receive a bill credit that is among the highest in the country. Similarly, SCE incurs lower program costs by limiting incentive payments to participants whose system sizes are smaller than average.

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Table 8: Commercial Load Management Program Comparison

Program Element/ Metric	LG&E / KU	Best Practice Program: Less Mature Market	Best Practice Program: More Mature Market
		SDG&E, Summer Saver Program Start Year: 2005	Southern California Edison, Summer Discount Plan Program Start Year: 1985
Program Objective	Reduce peak demand, and delay the need for new generation	Provide reliable and cost-effective demand response	Provide reliable and cost-effective demand response
Target Market(s)	Small commercial customers	Small commercial customers	Small commercial customers
Market Penetration (annual)	Currently at 5%, increasing to 6% in Year 3	Estimated at 7%	Estimated at 4%
Measures Types (continuing)	One way switches and thermostats for CAC and other appliances	One way switch for CAC	One way switch for CAC
Measures Types (new)	One way switches and thermostats for CAC and other appliances	One way switch for CAC	One way switch for CAC
Incentive Structure	<ul style="list-style-type: none"> • \$20 bill credit per customer per CAC unit, flexibility to increase to \$40 in Year 4 • Additional bill credit of \$1 per ton per month for CAC units larger than 5 tons • No bill credit for thermostat option • \$8 bill credit per customer per electric water heater/pool pump, flexibility to increase to \$16 in Year 4 • Proposed install bonus 	<ul style="list-style-type: none"> • Ranges from \$9 to \$15 per AC system size in tons, depending on cycling strategy, size of AC unit • Additional \$10 Weekend Bonus Credit 	Ranges from 1.4 to 40 cents per day per AC system size in tons, depending on cycling strategy, size of AC unit, and choice of number of events per season
Marketing	Traditional marketing efforts through direct mail, website, bill inserts, and other activities and events	Traditional marketing efforts, as well as door-to-door marketing and other direct outreach methods	Traditional marketing efforts; Use of targeting to high-use customers is unknown
Delivery	LG&E / KU handles marketing, and monitoring of load impacts; Implementation contractor handles all other program activities, including equipment installation, maintenance, and repair, and auditing and verification	Implementation contractor (Comverge) handles marketing and recruitment, and all other program activities	SCE handles marketing, recruitment, and call center; Implementation contractor handles all other program activities

Discussion of the Companies' versus Others' Programs

Overall, the Companies' Load Management program compares favorably to best practice load control programs. Equipment costs correspond to what is available in the market, and program costs are comparable to best practice. The most important feature is that the program is offered to commercial customers; most other load control programs are open only to residential customers. In addition, the program contains other features, such as the control of multiple customer appliances, which set it apart from other programs. A comparison of savings and cost-effectiveness is more difficult due to the disparity in retail rates, avoided costs, and system peak demand between the Companies and their peers. However, ICF concludes the Companies are expanding the program correctly by increasing incentives, in order to increase participation and savings, and decrease program costs.

Conclusions

ICF suggests the Companies consider the following implementation strategies in the future:

1. In addition to offering incentives based on system size, and increasing the annual incentives, the Companies should continue to monitor the incentive structures of comparable programs, and the relationship between incentives and new participants.
2. Recruit small commercial customers through unique marketing efforts, similar to what SDG&E does. In addition to increasing participation, this could decrease the program's marketing costs per participants, as well as identify customers for participation in other programs.
3. Introduce other best practice techniques, such as the introduction of real-time pricing. The availability of real-time pricing data to the participant would be akin to a price response program, and would allow for greater participant control during an event. The Companies would be able to increase participation by promoting multiple control options to participants.

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Table 9: Commercial Load Management Program Results Comparison

Program Element/ Metric	LG&E / KU		Best Practice Program: Less Mature Market	Best Practice Program: More Mature Market
	Year 1	Year 3	We Energies, Energy Partners 2008	Southern California Edison, Summer Discount Plan 2009
Annual Energy Savings MWh	244	564	N/A	N/A
Annual Demand Reduction kW	5,800	7,500	12,132	127,100
Annual Incentive Costs	\$81,724	\$152,594	N/A	N/A
Annual Non-Incentive Costs	\$240,096	\$325,983	N/A	N/A
Annual Budget	\$321,821	\$478,578	\$1,968,400	\$14,776,739
Participants	5,100	6,300	5,403	11,167
kWh/Participant	48	90	N/A	N/A
kW/Participant	1.1	1.2	2.2	11.4
% Budget incentive costs	25%	32%	N/A	N/A
% Budget non-incentive costs*	75%	68%	N/A	N/A
% Budget EM&V	17%	15%	N/A	N/A
\$/1st year kWh	\$1.32	\$0.85	N/A	N/A
\$/1st year kW	\$55	\$64	\$162	\$116
Cost/Participant	\$63	\$76	\$364	\$1,323
NTG Ratio	1.00	1.00	N/A	N/A

*Includes % EM&V costs

Source(s):

SDG&E filing, CA PUC website,
Proceeding A0806002;
Evaluations available at
CALMAC.org

SCE filing, CA PUC website,
Proceeding A0806001;
Evaluations available at
CALMAC.org

5.1.3. *Commercial Conservation / Commercial Incentives*

Description of the Companies' program

The Companies' Commercial Conservation (Energy Audits)/Commercial Incentives program expands upon the current commercial audit program by providing additional incentives to commercial customers to make energy efficiency upgrades. In the current program, a customer receives a visit from a certified auditor, who then conducts a facility audit – either Level 1 for small commercial customers, or Level 2 or 3 for custom projects. The auditor then provides a report with recommendations for energy savings upgrades and the costs to install them. Customers can then choose to have the auditor install the upgrades, or can have another contractor implement the recommendations. Customers would receive the audit at no cost, but would have to pay for the upgrades themselves.

In the program expansion, the Companies seek to add refrigeration measures to the list of eligible projects, as well as offer incentives for custom measures. The Companies are also increasing the total amount of incentives available through the program by offering a set \$100 per kW reduced incentive.

Components of Best Practice programs

The following are components of best practice load control programs:

- Inclusion of audits/assessments to educate customers and encourage participation
- Program design that includes both prescriptive and custom incentives for all measure types
- Applicability to and participation of all customer sub-sectors and sizes
- Use of trained contractors and trade allies, to market and implement the program
- Incorporation of EPA's Portfolio Manager benchmarking tool, in order to identify potential projects and monitor post-installation progress

Summary of Best Practice programs

The two programs discussed below can be considered best practice; however, the primary rationale to use them as comparison points is to detail the two models that are used most often for commercial and industrial (C&I) retrofit programs. Entergy Arkansas Inc. (EAI) has designed their C&I portfolio based on customer size, and developed custom incentives to encourage participation. On the other hand, NV Energy (comprised of Nevada Power and Sierra Pacific Power) uses a portfolio approach that segments each program based on measure type. The measure types are typically denoted as Prescriptive, Custom, and Retro-commissioning. A Prescriptive program generally includes a set incentive for a specific piece of equipment, such as \$10 for a T8 lighting fixture. A Custom program typically sets an incentive according to kWh or kW saved in order to include equipment that is not covered by the Prescriptive program. Retro-commissioning programs include measures that are designed to improve building performance, and can include both prescriptive and custom incentives.

The Entergy Arkansas, Inc. (EAI) Quick Start portfolio was developed as a result of an Arkansas Public Service Commission order in 2007 for the state's investor-owned utilities to offer DSM programs to their customers. The Quick Start portfolio includes three energy efficiency programs that are targeted to commercial and industrial (C&I) customers, based on customer size and familiarity with energy efficiency upgrades.⁸ The Small C&I program is available to customers with peak electricity demand of less than 100 kW. Customers can choose from a list of participating contractors, and receive a free walk-through assessment. The incentive amount is \$115 per kW reduction for lighting, HVAC and chiller, and motors upgrades that are installed within 45 days. The Large C&I Energy Solutions is available to customers with peak electricity demand of 100 kW or greater. Customers are given more flexibility with regards to their energy assessment (i.e. they can choose their own contractor or have the program provide one). Similar to the Small C&I program, the incentive amount of \$159 per kW reduction applies only to lighting, HVAC and chiller, and motors upgrades.

The Large C&I Standard Offer program is also available to customers with peak electricity demand of 100 kW or greater. This customer segment is assumed to be familiar with implementing energy efficiency upgrades and is given flexibility with regards to the participation process (i.e. they are not required to conduct an assessment). The process for this program is similar to other standard offer programs, where participant facilities are subject to pre- and post-installation inspections, and receive incentives based on the amount of peak demand reduced; for EAI's program, the incentive is \$230 per kW reduction. For all three programs, incentives are paid by the utility following completion or verification of the project.

The advantage of this *Customer* approach is the simple design; customers are eligible for one program, and can receive incentives for the installation of upgrades for all end-uses and building types. If a customer has a peak demand of 50 kW, they know they are eligible only for the Small C&I program. They would then speak with an account representative, choose a contractor, and begin participation in the program. One disadvantage of the Customer approach is the lack of flexibility regarding program design. If, for example, because of the economic downturn, small commercial customers are not participating due to a lack of financing, the unused portion of the program budget is not easily transferable to the large customer programs. Another disadvantage is the preference given to measures that produce higher peak demand savings (HVAC, motors, etc.) versus those that produce lower peak demand savings (lighting, etc.). This would result in lost opportunities for certain energy efficiency retrofits that save energy but not demand.

NV Energy's Sure Bet Commercial Incentives program provides a variety of prescriptive and custom incentives, and technical assistance for non-residential customers across the utility's geographically-disparate Northern and Southern territories.⁹ Customers submit one single pre-application form (required for large Prescriptive and all Custom projects), install the upgrades (using their preferred or an NV Energy-trained contractor), and receive incentive payments within 4-6 weeks of submitting post-installation project documentation. Through 2007, the program was utilizing 39 trained contractors.

The Prescriptive component of the program includes incentives for lighting, cooling (including HVAC units, variable speed drives for fans and pumps, and window film), miscellaneous (motor controllers

⁸ More information is available at http://www.energy-arkansas.com/energy_efficiency/business.aspx.

⁹ More information is available at <http://www.nvenergy.com/saveenergy/business/incentives/surebet/documents/applications/2009SureBetPP.pdf>.

and pool/spa pumps), and commercial kitchen/refrigeration measures. The Custom component of the program provides incentives (for measures not covered by the Prescriptive component) of 10 cents per kWh for the first year's on-peak savings, and 5 cents per kWh for the first year's off-peak savings. The program also contains services for building optimization (similar to Retro-commissioning, as discussed above) and small commercial direct install incentives. Incentive payments to participants have a soft cap of \$100,000; projects above this amount receive between 10% and 50% of the total incentive. In general, the incentives were designed to achieve a two year post-incentive payback. Program savings were nearly equal between Prescriptive and Custom projects, which show broad inclusion and participation among measure and customer types.

The advantage of this *Measure* approach is the flexibility with regards to program design. Customers are able to participate in multiple program components, while still receiving incentives for a variety of upgrades. A customer that needs both lighting upgrades and a chiller replacement would participate in both the Prescriptive and Custom components (while, at least in the Sure Bet case, submitting only one application). In addition, under this approach, programs would be unaffected by economic or other barriers that would restrict a customer segment from program participation. As explained above, in the "Customer" approach, if the Small C&I program is less popular than the Large C&I program, it would not be easy to transfer program funds from the Small C&I budget to the Large C&I budget. However, in the "Measure" approach, if lighting upgrades are less popular than HVAC upgrades within the Prescriptive component, additional funds could be used to market and install more HVAC upgrades. One disadvantage of the "Measure" approach is the additional infrastructure and costs needed to engage trade allies (manufacturers, retailers, etc.) for a Prescriptive component. In order to offer incentives for lighting and other upgrades, a utility would need to work with these trade allies to make sure their products are available in the market. However, over time, these costs should decline as the program expands.

Duke Energy Kentucky is following the *Measure* approach, and includes prescriptive incentives for lighting, motors, HVAC, refrigeration, and other measures as part of its SmartSaver program. The utility also offers an on-line benchmarking analysis. However, it does not offer any custom incentives, and incentive payments are typically capped at 50% of total project costs up to a maximum of \$50,000 per customer facility. In the past few years, the number of installations has been heavily weighted towards lighting measures.

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Table 10: Commercial Conservation / Commercial Incentives Program Comparison

		Best Practice Program: Less Mature Market	Best Practice Program: More Mature Market
Program Element/ Metric	LG&E / KU	Entergy Arkansas C&I Programs Program Start Year: 2007	Nevada Energy Sure Bet Program Start Year: 1985
Program Objective(s)	Provide audits and rebates to qualifying commercial customers for the retrofit of less efficient equipment by adding refrigeration measures and a set per kW incentive to its existing program	Provide a suite of energy efficiency options to C&I customers, including audits, rebates, and custom incentives, including per kW	Provide prescriptive and custom energy efficiency incentives to C&I customers
Target Market(s)	Large commercial customers	All non-residential customers	All non-residential customers
Market Penetration (annual)	Estimated at 1%	Estimated at < 1%	Estimated at < 1%
Measures Types (continuing)	Facility audit, with recommendations for lighting, HVAC, and other measures	Facility energy assessments, with rebates for lighting, HVAC and chillers, and motors	Lighting, HVAC, refrigeration, and other prescriptive, as well as custom measures
Measures Types (new)	Facility audit, with incentives for lighting, HVAC, refrigeration, and custom measures	Facility energy assessments, with rebates for lighting, HVAC and chillers, and motors	Lighting, HVAC, refrigeration, and other prescriptive, as well as custom measures
Incentive Structure	\$100 per kW reduced, up to an annual maximum of \$50,000, or \$100,000 over two years, per facility	Ranges from \$115 to \$230 per kW reduced	<ul style="list-style-type: none"> • Prescriptive – varies by measure • Custom – 5 to 10 cents per kWh reduced • Soft cap of \$100,000 per participant
Marketing	Through the Business Service Center, the audit contractor, and trade allies, as well as through direct mail, newsletters, and targeting of large customers	<ul style="list-style-type: none"> • Small customers – through direct mail • Large customers – through Account Managers 	Through the website and account executives, as well as direct outreach to CoC organizations, BOMA, etc.
Delivery	Current audit contractors will conduct audits, prepare reports with energy savings recommendations, install upgrades, or refer customers to Dealer Referral Network; Upgrades will then be installed by participating contractors	Depending on the program, both participating and non-participating contractors will conduct assessments and install upgrades	Implementation contractor (KEMA) handles all program activities, including applications, inspections and incentive processing

Discussion of the Companies' versus Others' Programs

The Companies' program is unique among the state's largest utilities, and it has historically exceeded their goals for number of audits performed, and achieved their goals for energy savings. The proposed expansion will address some of the issues detailed in the most recent evaluation report. For example, the \$100 per kW incentive will likely increase the participation of large customers, whose peak demand reduction potential is greater than small customers. In addition, the inclusion of refrigeration measures will match the design of several best practice programs. Overall, the program's expansion to include additional prescriptive and custom measures makes it more similar to best practice programs in California, Nevada, Wisconsin, and other states.

Conclusions

ICF suggests the following in order for the program to reach its goals and continue program cost-effectiveness:

1. Per the most recent evaluation report, the Companies should ensure that the audits are comprehensive and are continuing to motivate customers to participate in the program. Many best practice programs also include audits and other technical assistance as a way to educate customers and market programs.
2. Monitor participation to ensure engagement with both small and large commercial customers. The incentive per kW will encourage participation from a broad mix of customers, and lead to cost-effective savings and achievement of program goals.
3. Continue to add prescriptive measures that are cost-effective, innovative, and available in the market. The Companies should also continue to work with trade allies to ensure their continued participation with and promotion of the program.
4. In the future, consider incorporating the EPA's Portfolio Manager benchmarking tool to provide customers with ongoing and post-project information regarding facility usage and savings. The tool is becoming an innovative program option in multiple utility portfolios, including California, Massachusetts, and Washington.¹⁰ In addition, the Companies can use LG&E's experience with the *Louisville Kilowatt Crackdown* to introduce this to other parts of the territory. Since this initiative requires investment in equipment and personnel, the Companies should implement it once the expanded program has been running for a few years. This will allow the tool to be applied to a larger participant base, and ensure greater persistence of energy savings.

¹⁰ More information is available at <http://www.cee1.org/cee/mtg/06-09mtg/files/BB2Narel.pdf>.

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Table 11: Commercial Conservation / Commercial Incentives Program Results Comparison

Program Element/ Metric	LG&E / KU		Best Practice Program: Less Mature Market	Best Practice Program: More Mature Market
	Year 1	Year 3	Entergy Arkansas C&I Programs 2008	Nevada Energy Sure Bet 2007
Annual Energy Savings MWh	54,988	54,988	31,834	84,532
Annual Demand Reduction kW	20,689	20,689	5,610	14,140
Annual Incentive Costs	\$2,000,000	\$2,000,000	\$1,666,835	\$3,579,927
Annual Non-Incentive Costs	\$1,255,400	\$1,316,121	\$518,441	\$2,796,550
Annual Budget	\$3,255,400	\$3,316,121	\$2,185,276	\$6,376,477
Participants	880	880	52	527
kWh/Participant	62,486	62,486	612,192	160,402
kW/Participant	23.5	23.5	107.9	26.8
% Budget incentive costs	61%	60%	76%	56%
% Budget non-incentive costs*	39%	40%	24%	44%
% Budget EM&V	1%	0%	N/A	N/A
\$/1st year kWh	\$0.06	\$0.06	\$0.07	\$0.08
\$/1st year kW	\$157	\$160	\$390	\$451
Cost/Participant	\$3,699	\$3,768	\$42,025	\$12,100
NTG Ratio	0.80 to 0.90	0.80 to 0.90	1.00	0.63

*Includes % EM&V costs

Source(s):

EAI filing, Arkansas PSC website, Docket 07-085-TF

NV Energy filing, Nevada PUC, Docket 08-8011, 08-8012

5.1.4. Residential Conservation / Home Energy Performance

Description of the Companies' program

The Companies' Residential Conservation/Home Energy Performance program expands upon the current audit program by providing additional incentives to single family customers to make energy efficiency retrofits for their homes. In the current program, a customer receives a visit from a certified auditor, who records appliance data and energy characteristics of the home. A blower door test was included in the audit in 2009. The auditor then prepares a report that includes historical energy usage, and provides a list of recommended energy upgrades and their related savings and costs. The customer would pay the \$25 audit cost, and the full cost of any measure installations.

In the program expansion, customers choose from among three tiered participation options, corresponding to 10 percent, 20 percent, and 30 percent savings relative to total energy usage. Certified auditors conduct the Tier 1 audit (equivalent to the current level of service), and provide the participant with a list of Tier 2 and Tier 3 upgrades, and referrals to certified contractors. Participants can then choose to implement these upgrades at their own cost within 12 months of the initial audit, and submit post-installation rebate applications to the Companies. The rebate amounts are a maximum of \$500 for Tier 2, and \$1000 for Tier 3.

The current online audit would continue as part of the program. In addition to receiving the above report, online audit participants also receive a free four-pack of high efficiency light bulbs and are encouraged to participate in other components of the program to obtain additional savings.

Components of Best Practice programs

The following are components of best practice residential retrofit programs:

- Tiered efficiency options, ranging from walk-through audits to comprehensive audits (diagnostic audits that include blower-door and duct blaster tests), as well as a range of home efficiency project options
- Incentive options (with cost cap) commensurate with efficiency options, including audit with direct install to rebates
- Focus on whole-home approach
- Use of certified (e.g. RESNET or BPI) contractors, to market and implement the program
- Coordinate with statewide agencies, if applicable

Summary of Best Practice programs

The Baltimore Gas and Electric (BG&E) Smart Energy Savers portfolio includes an audit component, a Quick Home Energy Check-up, and a Home Performance with ENERGY STAR® (HPwES) component, for residential single-family customers. Customers who choose the quick audit receive a visit from a certified auditor, and can have the \$40 audit fee waived by installing at least three out of five measures from a list that includes CFLs and hot water measures. The auditor also checks the insulation and air sealing levels, and the HVAC systems, and provides a list of findings and recommendations that can further reduce the participant's energy usage and costs.

Participants can also choose to receive a more comprehensive and diagnostic audit through HPwES. A BPI-certified contractor would conduct an HPwES Home Energy Audit, including blower door and duct blaster tests, and present a list of efficiency upgrade opportunities to the participant. The upgrades include air and duct sealing, insulation, and HVAC and hot water systems. The contractor would then install the agreed-upon upgrades, and receive full payment for services from the participant. After about six to eight weeks, the participant would receive partial reimbursement via the rebate check. Rebates are limited to \$1300 per participant, but can exceed this amount if a new HVAC unit is installed.

The HPwES program began in Maryland in 2007 as a pilot program run by the Maryland Energy Administration (MEA). MEA's program was a success, and received an EPA Excellence in ENERGY STAR Promotion Award in 2009. Using the successful pilot as a model, BG&E's HPwES program design was submitted for and received regulatory approval in the fourth quarter of 2008, and was approved by the EPA as a Program Sponsor in the second quarter of 2009. Sponsors are able to market their programs using the nationally-known ENERGY STAR brand name, and take advantage of other support, including marketing toolkits and sales and contractor training courses. The program began operating in the third quarter of 2009 as the state's first utility-run HPwES program, and includes 25 qualified contractors.

With the use of multiple installation contractors, BG&E's program follows the HPwES market transformation model. This approach typically can take up to one year or more to ramp-up, in order to build program infrastructure, and can be more expensive in the short term than the resource acquisition model. However, in the long term, awareness of the program and its contractor network could result in lower costs and greater energy savings. BG&E's tiered approach, beginning with the Quick Home Energy Check-up, is designed to mitigate the long lead time, and provide customers with simply-designed retrofit options.

Massachusetts' MassSAVE portfolio is a public/private partnership that provides energy efficiency options to customers through their local utility. MassSAVE has contained an HPwES component since 2002, is also an HPwES Program Sponsor, and has been recognized as Best Practice by The American Council for an Energy-Efficient Economy (ACEEE). National Grid's HPwES program contains a no-cost home energy assessment (HEA) and offers rebates for efficiency upgrades. The HEA is conducted by the implementation contractor's (Conservation Services Group) certified auditors, and includes blower door and duct leakage tests. The contractor then installs the agreed-upon upgrades, and coordinates with sub-contractors for additional upgrades as necessary. Typical upgrades include air sealing, insulation, and the installation of efficient HVAC systems. Rebates are available for up to 75 percent of installation costs, with a \$2000 maximum. Participants are also eligible for zero-interest financing of up to \$15,000 over seven years, through MassSave's HEAT Loan program.

National Grid's retrofit program has been conducting HEAs since 1980, but the program's original focus was on education. Since the advent of the HPwES model in 2001, the program has evolved into a whole-home approach. National Grid's HPwES program follows the resource acquisition model, where typically one contractor implements the program, and installs the efficiency upgrades. This results in lower marketing and training costs, and allows the utility and the contractor to bring the program to the market more quickly. In addition, the resource acquisition model can result in more participants and installations, greater energy savings per home, and market penetration rates compared to the market transformation model.

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Table 12: Residential Conservation / Home Energy Performance Program Comparison

Program Element/ Metric	LG&E / KU	Best Practice Program: Less Mature Market	Best Practice Program: More Mature Market
		BGE, Retrofit Program Start Year: 2009	National Grid, MassSAVE Program Start Year: 2000
Program Objective(s)	Utilize a whole-house approach to provide single family homes with additional options for energy saving retrofits and continue the participation from current audit programs	Two-tiered approach to motivate residential single family homes to adopt comprehensive, whole-home energy retrofits	Provide a singular source for home retrofit measures through audits, incentives, and education
Target Market(s)	Residential single family homes	Residential single family homes	Residential single family homes
Market Penetration (annual)	<ul style="list-style-type: none"> • 0.2% in Year 1, increasing to 0.3% in Year 3 • On-line audit penetration of 0.4% (3,000 audits) in Year 1, increasing to 0.8% (6,000 audits) in Year 3 	Estimated at 0.04%; Increasing to 0.2% in 2010	Estimated at 0.6%
Measures Types (continuing)	<ul style="list-style-type: none"> • On-line audit - 4-pack high efficiency light bulbs; On-site audit consisting of visual inspection, appliance data recording, and other home measurements • Also includes a blower door test 	<ul style="list-style-type: none"> • Tier 1 - Quick Home Energy Check-up • Tier 2 - Home Performance with ENERGY STAR 	<ul style="list-style-type: none"> • Tier 1 - Information only • Tier 2 - Audit, and installation of insulation, air sealing measures, programmable thermostats
Measures Types (new)	<ul style="list-style-type: none"> • On-line audit - 4-pack high efficiency light bulbs; Tier 1 - Similar to on-site audit, and includes CFLs, hot water and minor air sealing direct install measures • Tiers 2 and 3 - Other air sealing, insulation, and HVAC maintenance measures 	<ul style="list-style-type: none"> • Tier 1 - Quick Home Energy Check-up • Tier 2 - Home Performance with ENERGY STAR 	<ul style="list-style-type: none"> • Tier 1 - Information only • Tier 2 - Audit, and installation of insulation, air sealing measures, programmable thermostats
Incentive Structure	<ul style="list-style-type: none"> • Tier 1 - Direct install measures (corresponds to 10% savings) • Tier 2 - Post installation \$500 rebate (20% savings); Tier 3 - Post-installation \$1000 rebate, (30% savings) 	<ul style="list-style-type: none"> • Tier 1 - Audit with CFL and hot water kit • Tier 2 - Prescriptive incentives with 15% measure cost cap 	75% of measure costs up to \$2000

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Program Element/ Metric	LG&E / KU	Best Practice Program: Less Mature Market	Best Practice Program: More Mature Market
		BGE, Retrofit Program Start Year: 2009	National Grid, MassSAVE Program Start Year: 2000
Marketing	<ul style="list-style-type: none"> Traditional marketing efforts through direct mail, website, bill inserts, and other activities and events Prior program has had most success with bill inserts/direct mail 	Traditional marketing efforts, as well as through contractor outreach	Through MassSave brand awareness campaign, which includes media buys and direct mail, and through implementation contractor
Delivery	Through Dealer Referral Network, consisting of certified contractors	Through implementation contractor, and technical sub-contractors, many of whom are HERS raters and/or BPI Building Analysts	Through primary implementation contractor, and sub-contractors

Discussion of the Companies' versus Others' Programs

Overall, the Companies' Residential Conservation / Home Energy Performance program compares favorably to best practice home retrofit programs. The program's expansion to include multiple audit and rebate options and focus on a whole-home approach makes it similar to best practice programs in Maryland, Massachusetts, New York, Wisconsin, and other states. In addition, the Companies can take advantage of their existing relationship with the BPI network to expand program infrastructure. However, since the program is not run statewide, as is the case in other states, the Companies are at a disadvantage in that they are not able to share marketing, contractor training, and other costs.

Conclusions

ICF suggests the following in order to overcome this and continue program cost-effectiveness:

1. Investigate the option of becoming an HPwES Program Sponsor. Based on conversations with the Companies, ICF believes they have already begun researching the advantages and disadvantages of sponsorship.
2. While considering HPwES resource acquisition model and the market transformation model, also consider a hybrid approach, where the resource acquisition model eventually evolves into the market transformation model.
3. If using the market transformation model, build the program infrastructure and contractor network such that, over time, minimal involvement by the Companies will be necessary. The availability of more contractors will increase competition, decrease customers' costs, and decrease the Companies' program costs.
4. In lieu of statewide resources, take advantage of EPA national program support and expertise from utilities in other states.

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Table 13: Residential Conservation/Home Energy Performance Program Results Comparison

Program Element/ Metric	LG&E / KU		Best Practice Program: Less Mature Market	Best Practice Program: More Mature Market
	Year 1	Year 3	BGE, Retrofit 2009	National Grid, MassSAVE 2007
Annual Energy Savings MWh	2,948	5,165	642	4,839
Annual Demand Reduction kW	767	1,313	190	1,169
Annual Incentive Costs	\$180,000	\$300,000	N/A	N/A
Annual Non-Incentive Costs	\$1,280,826	\$1,907,217	N/A	N/A
Annual Budget	\$1,460,826	\$2,207,217	\$1,361,268	\$5,378,468
Participants	7,200	14,000	1,716	6,000
kWh/Participant	409	369	374	807
kW/Participant	0.1	0.1	0.1	0.2
% Budget incentive costs	12%	14%	N/A	N/A
% Budget non-incentive costs*	88%	86%	N/A	N/A
% Budget EM&V	0%	0%	0%	3%
\$/1 st year kWh	\$0.50	\$0.43	\$2.12	\$1.11
\$/1 st year kW	\$1,905	\$1,681	\$7,165	\$4,601
Cost/Participant	\$203	\$158	\$793	\$896
NTG Ratio	1.00	1.00	0.90	N/A

*Includes % EM&V costs

Source(s): BGE filing, MD PSC, Case 9154

National Grid filing, MA DOER website; ACEEE Compendium of Champions report, 2008

5.1.5. Residential Low Income Weatherization (WeCare)

Description of the Companies' program

The Residential Low Income Weatherization Program (WeCare) is designed to reduce energy consumption for LG&E and KU's low income customers. The program provides energy audits, energy education, performs blower door tests, and installs weatherization and other energy conservation measures on qualified houses. The modified WeCare program presented in this filing is the third generation of the Companies' Low Income weatherization initiative. The original Energy Partners Program (EPP) pilot (1994) was modified to increase cost-effective savings based on EM&V findings; the program evolved into the WeCare Low Income Weatherization Program in 2001. The third generation program (also called WeCare) builds upon the Companies' experience with this hard-to-reach sector by adding HVAC unit replacement and envelope sealing measures to their list of offerings. The Companies are proposing this expansion in WeCare's offerings because the program has found that for a portion of eligible customers, there is a significant need for, and significant savings potential associated with installing a new HVAC unit and/or envelope sealing. In addition, the Companies are committed to the expansion of the program by more than tripling the budget and number of participants between Year 1 and Year 7 of program operation.

Components of Best Practice programs

Low income weatherization programs have been implemented by both public and private organizations for decades. Therefore, there is a wealth of literature on best practices.

Best practices in the delivery of low income weatherization program include:

- Leveraging efforts of other programs, e.g. local LIHEAP and WAP programs;
- Making the program stable and consistent;
- Setting clear expectations with auditors/contractors;
- Auditing a statistically significant sample of weatherized homes;
- Developing a network of local auditors and installers who are committed to high-quality standards;
- Controlling for free-ridership through periodic market studies, and consumer surveys; and,
- Offering a mix of services and measures attractive to homeowners.¹¹

Summary of Best Practice programs

It is standard practice in the U.S. that DSM portfolios include at least one program that provides energy efficiency services to low income customers. Even though these programs are typically less cost-effective (have lower TRC and UCT test results) than other programs, most utility commissions make exceptions to their cost-effectiveness rules under certain circumstances. In the case of low income programs, commissions also consider fairness criteria in order to ensure that DSM services are made available to each market segment. Further, most commissions also

¹¹ Many of these best practices were drawn from Best Practice Benchmarking for Energy Efficiency Programs: Residential Single-Family Comprehensive Weatherization Best Practices Report. Available at, http://www.eebestpractices.com/pdf/BPSummaryTable_R4.PDF.

require the DSM portfolio as a whole to be cost-effective so that more expensive low-income, education and pilot initiatives are offset by other programs that are less expensive such that the end result is a portfolio of DSM programs that passes the TRC and/or the UCT test(s).

ICF chose three programs against which to compare WeCare. These programs are operated in states with different levels of market maturity; California (most mature), Colorado (somewhat mature), and Texas (less mature).

The PG&E, Xcel (Public Service), and AEP-Texas North (TNC) low-income weatherization programs have many common elements, including:

- Comprehensive audit and weatherization services;
- Customer education;
- Coordination with local LIHEAP or WAP programs; and,
- Reliance on weatherization contractors to deliver program services.

Based on our understanding of these utilities' low income initiatives, each program conducts all of the seven best practices listed above.¹²

The main differences between these programs are the extent of their coordination with other low income programs and the range and extent of program marketing. Xcel's program, for example, is heavily leveraged by state and federal low income programs; in fact, the program was designed to complement the services of, and acquire additional savings beyond those achieved by public programs. PG&E promotes their program heavily in communities throughout its large service territory. Program representatives travel to community forums and conduct presentations on the utility's low income energy efficiency offerings and the "CARE" tariff (mandated by the CPUC), which is available to qualified low income customers. TNC's program is a requirement set forth by the State Senate to provide weatherization services and efficiency education to low income customers. Participating agencies verify customer eligibility, audit homes, and determine which measures to install based on savings-to-investment ratios (SIRs), home, and market penetration rates compared to the market transformation model.

¹² One exception noted by ICF is that it is not clear how often and at what level of detail the Xcel and TNC programs are evaluated.

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Table 14: Residential Low Income Weatherization (WeCare) Program Comparison

		Best Practice Program: Market Maturity High	Best Practice Program: Market Maturity Mid	Best Practice Program: Market Maturity Mid-to-Low
Program Element/ Metric	LG&E / KU	PG&E, Energy Partners Program Program Start Year: 1983	Xcel Energy Colorado, Single Family Low- Income Weatherization Program Program Start Year: NA	AEP North Texas (TNC), Targeted Low-Income Program Start Year: NA
Program objective(s)	(1) Reduce customer energy consumption and expenditures, and arrearages (2) Provide program participation opportunities for hard-to-reach markets	Increase low income customer comfort while reducing their energy consumption, costs and economic hardship.	Provide no-cost energy efficiency services to income-eligible customers, seniors and disabled. Increase and expand education among low income customers on the importance of energy efficiency and the value of taking action to improve efficiency in their homes.	Cost-effectively reduce the energy consumption and energy costs of TNC's low income residential customers. This program is required per TX State Senate Bill 712 "Weatherization Program"
Target Market(s)	Households at or below LIHEAP Federal Poverty level. Both homeowner and renters are eligible. There are 3 Tiers of participants: A, B, and C. Customers in Tier A have the lowest energy use and those in Tier C have the highest. The higher use clients (Tiers B and C) are initially identified by their annual gas or electric consumption. These clients usually receive multiple visits from the Weatherization Audit Contractor.	Low income households as defined by the CA Public Utilities Commission (CPUC). 2006 threshold was household income less than or equal to 200% of poverty level.	Households with median income below 80% of area median income. Participants must first apply for LIHEAP funding. Customers meeting DOE WAP funding guidelines are also automatically considered eligible	To be eligible, customers must meet current DOE Weatherization Assistance Program (WAP) income eligibility guidelines (200% of poverty level in 2009), receive electric power from TNC, and have electric air conditioning.
Market penetration (annual)	1,200 homes/year, increasing to 4,200 homes/year in Year 7	66,000 homes (approximately 2% of qualified homes)	1,958 single family homes	39 homes

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		Best Practice Program: Market Maturity High	Best Practice Program: Market Maturity Mid	Best Practice Program: Market Maturity Mid-to-Low
Program Element/ Metric	LG&E / KU	PG&E, Energy Partners Program Program Start Year: 1983	Xcel Energy Colorado, Single Family Low- Income Weatherization Program Program Start Year: NA	AEP North Texas (TNC), Targeted Low-Income Program Start Year: NA
Measure types (continuing)	Weatherization, appliances, HVAC repair, hot water, CFLs	Weatherization, appliances, HVAC repair, hot water, CFLs	Services can include an energy audit, attic, wall and crawlspace insulation, air leakage reduction, appliance safety inspections, forced air efficiency assessment, high efficiency lighting surveys and other safety inspections.	Weatherization, other cost-effective measures.
Measures types (new)	HVAC (replacement) and envelope repair	NA	NA	NA
Incentive structure	All program services and measures are free to participants. Measure caps vary by customer Tier.	All program services and measures are free to participants.	All program services and measures are free to participants.	Measures are installed based on measure savings-to-investment (SIR) ratio. Installed measures are free to participants.
Marketing	The Weatherization Audit Contractors (WACs) are the primary marketing arm of the program, conducting direct marketing through mail and telephone solicitation. The primary source of participants is a targeted list prepared by LG&E / KU. Secondary sources of clients include, LIHEAP clients, referrals from local WAP programs, and referrals by local community-based organizations.	The program is promoted primarily through auditors/contractors, but PG&E also conducts extensive community outreach, in addition to traditional marketing collateral telemarketing, and promotion through the program Web site. Participation in community events has been extensive. Presentations promote both the weatherization services as well as the state's special billing rate for low income populations.	The program is promoted through local low income service providers. The program Web site directs interested customers to appropriate agencies. Xcel customers are informed of the program when they sign up for LIHEAP funding.	The program conducts targeted outreach to weatherization service providers in TNC's territory.

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		Best Practice Program: Market Maturity High	Best Practice Program: Market Maturity Mid	Best Practice Program: Market Maturity Mid-to-Low
Program Element/ Metric	LG&E / KU	PG&E, Energy Partners Program Program Start Year: 1983	Xcel Energy Colorado, Single Family Low- Income Weatherization Program Program Start Year: NA	AEP North Texas (TNC), Targeted Low-Income Program Start Year: NA
Delivery	The program is delivered primarily by the WACs. All participants (Tiers) receive an initial visit during which the WAC performs a walk through audit and installs low-cost measures. WACs recommend additional measures and the program pays for any recommended projects implemented, up to the cap for the customer's Tier. For all projects completed, the auditor conducts a post-installation inspection and education session.	All participants receive a comprehensive energy analysis of their home. Customers are asked to commit to at least 3 energy conservation practices. CFLs are directly installed. Participants are eligible installation qualified measures recommended by the auditor.	During the weatherization process auditors provide participants with education materials historical energy use data, and a billing analysis.	Weatherization service providers verify customer eligibility, conduct an assessment of eligible customer homes, and install cost-effective measures.
Leveraging of Federal funds for low income weatherization	WeCare coordinates with the local Weatherization Assistance Program (WAP). Coordination efforts are focused on Tier A WeCare customers who are eligible for fewer WeCare incentives than Tier B and C customers.	Program coordinates with local LIHEAP and WAP programs, as well as other low income programs run by state agencies.	Xcel's program complements federal weatherization (WAP) grants to produce incremental, cost-effective energy savings, and develops annual contracts with the eight weatherization agencies within their territory.	The program coordinates with the local WAP program.

Discussion of the Companies' versus Others' Programs

ICF finds that the Companies' WeCare program is consistent with best practice in low income weatherization program design. Amongst others, best practices exhibited by WeCare include (1) Leveraging federal funds for Weatherization; and, (2) Offering a mix of services and measures attractive to homeowners. This is very challenging market in which to achieve cost-effective savings, but the Companies have learned from their experience and adapted the program to changing market conditions, making WeCare more cost-effective than most comparable programs around the country.

The differences in program delivery between WeCare and the other programs primarily reflects state rules about low-income programs, or are implementation strategies found to be effective in those particular territories. For example, WeCare's tiered approach to low-income program services helps the Companies maximize program cost-effectiveness.

The Companies' tiered approach to program delivery helps ensure that low income program dollars are spent cost-effectively by spending more on homes that are the most energy-intensive (Tier C, customers using more than 16,000 kWh). This does not preclude other low income customers from receiving program services. Tier A (customers who use up to 11,499 kWh annually) and Tier B (customers who use between 11,500 and 16,000 kWh annually) customers are also eligible to receive a comprehensive audit, education and free measures (spending caps are lower for Tier A and B customers).

WeCare also compares favorably against other programs in terms of spending levels. Most low income program cost at least \$1 per first year kWh, but the Companies have managed to keep overhead low, maintain high quality services, and deliver results. Although Xcel's program is less expensive, this largely reflects the explicit role of Xcel's low income programs within the state of Colorado – its program is heavily leveraged by federal and state funds.

Approximately 9 percent of the Companies' proposed portfolio budget is dedicated to low-income customers for weatherization and related services; this amount increases to nearly 20 percent in Year 7. ICF finds that the Companies' initial level of spending on low income energy efficiency services is reasonable and appropriate, given the maturity of the market in the Companies' territory, given the levels of federal spending and program activity (WAP and LIHEAP) in Kentucky, and balanced against the Companies' need to meet the governor's aggressive energy savings goals.¹³

ICF also commends the Companies for increasing the program's participation and budget goals each year of program implementation. Since the State of Kentucky received an influx of WAP dollars through the federal Stimulus bill, ICF recommends that the Companies continue coordination efforts with local WAP and LIHEAP programs so that ratepayer dollars dedicated to the Companies' low-income initiatives are not wasted on supplemental program services. In addition, ICF recommends that the Companies monitor and evaluate the program to ensure that spending is efficient, and is generating consistent impacts over time.

¹³ As stated in "Intelligent Choices for Kentucky's Energy Future", the goals are to reduce energy consumption in Kentucky by at least 18 percent below currently projected 2025 energy consumption.

Conclusions

Based on a review of the proposed WeCare modification in this filing, and the existing WeCare program implementation manual, ICF concludes that WeCare implements the following best practices:

1. Leveraging efforts of other programs, e.g. local LIHEAP and WAP programs. WeCare coordinates with these programs intelligently by leveraging federal dollars where the Companies are spending less – on Tier A customers. ICF hopes that the Companies continue to carefully coordinate with local WAP and LIHEAP programs to ensure that WeCare's services complement those provided by the federal programs as these public programs grow through funds provided by the Stimulus package.
2. Making the program stable and consistent. WeCare's core program services have remained stable over time. Changes and new offerings were/are being made consistent with EM&V results and market demand.
3. Auditing a statistically significant sample of weatherized homes. WeCare conducts a technical process review (TPR) of each project. TPRs take place on 100 percent of participant jobs within one week of the field work.
4. Offer a mix of services and measures attractive to homeowners. The Companies continue to add and change program offerings over time to capitalize on existing market conditions and demand. Adding HVAC replacement measures further diversifies the Companies' measure mix available to low-income customers.

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Table 15: Residential Low Income Weatherization (WeCare) Program Results Comparison

Program Element/ Metric	LG&E / KU		Best Practice Program: Market Maturity High	Best Practice Program: Market Maturity Mid	Best Practice Program: Market Maturity Mid-to-Low
	Year 1	Year 3	PG&E, Energy Partners Program 2006	Xcel Energy Colorado, Single Family Low- Income Weatherization Program 2009 (from DSM Plan0	AEP North Texas (TNC), Targeted Low-Income 2008
Annual Energy Savings MWh	2,632	4,825	24,300	1,983	95
Annual Demand Reduction kW	262	481	NA	175	31
Annual Incentive Costs	\$0	\$0	NA	\$666,421	\$131,300
Annual Non-Incentive Costs	\$2,368,462	\$3,956,847	NA	\$83,049	\$21,700
Annual Budget	\$2,368,462	\$3,956,847	\$90,000,000	\$749,470	\$153,000
Participants	1,200	2,200	66,000	1,958	39
kWh/Participant	2,193	2,193	368	1,013	2,436
kW/Participant	0.2	0.2	NA	0.1	0.8
% Budget incentive costs	0%	0%	NA	89%	86%
% Budget non-incentive costs*	100%	100%	NA	11%	14%
% Budget EM&V	5%	3%	NA	2%	NA
% Portfolio budget dedicated to low income weatherization services	9%	11% (increases to 20% in Year 7)	California PUC rules treat low income programs separately from resource, or "impact" programs. The Low Income Energy Efficiency (LIEE) programs have their own portfolio and cost-effectiveness standards.	4%	15%
\$/1st year kWh	\$0.90	\$0.82	\$3.71	\$0.38	\$1.38
\$/1st year kW	\$9,033	\$8,231	NA	\$4,278	\$4,935
Cost/Participant	\$1,974	\$1,799	\$1,364	\$378	\$3,923
NTG Ratio	1.00	1.00	1.00	0.96	1.00

*Includes % EM&V costs

Source(s):

ACEEE. 2008
Compendium of
Champions

Xcel Energy. 2009/2010
DSM Biennial Plan. Docket
No 08A-366EG. Public
Service Commission of
Colorado. February 2009.

AEP North Texas (TNC).
2009 Energy Efficiency
Plan and Report. April 1,
2009.

5.2. New Programs

5.2.1. *Smart Energy Profile*

Description of the Companies' program

The Smart Energy Profile (SEP) program is unique amongst energy report-type initiatives in its foundations in social marketing research, and its built-in experimental design. The program will select large samples of test and control customers and directly mail the report to the test group on a monthly basis. Savings will be estimated through an econometric analysis comparing energy use between the test and control group. The program will specifically target high-use customers, at least in initial program years.

The Companies will use existing customer data, such as service point information, account information and current energy consumption to develop targeted, customer Smart Energy Profiles that will be mailed to customers at regular intervals throughout the year (e.g. monthly). Elements that are presented in the report may include a comparison of the customer's energy use vis-à-vis their peers (residents with similar home/building characteristics), presentation of the customer's current energy use versus their historical use, as well as customized and targeted messages to help the customer reduce energy use. The report will promote and recommend program and efficiency measures likely to benefit the customer based on individual household energy usage patterns.

Components of Best Practice programs

There are not any established best practices for social marketing-type programs, as these represent a relatively new type (or at least, less-evaluated) form of DSM initiative. Based on ICF's professional judgment and experience implementing DSM programs nationwide, we believe the following activities comprise best practices in the delivery of a Smart Energy Profile program:

- A clear and careful experimental design. Precise measurement of program savings requires early coordination with an EM&V contractor to ensure that the test and control groups are properly selected.
- Longitudinal data collection. Evaluations can demonstrate that first year program savings are significant and very cost-effective. However, savings persistence is not as well understood. For the program to learn and improve over time, both test and control group energy use data should be tracked and evaluated once customers have stopped receiving the report.
- Identify and target high-use customers. Research has shown the biggest energy reduction comes from this group.
- Deliver information in the reports in a manner than minimizes the boomerang effect. Often, customers that find out their energy use is less than their peers can subsequently increase their energy use. Some programs have found that the means of delivering information about peer energy use can minimize this effect.¹⁴

¹⁴ Hunt Alcott. Social Norms and Energy Conservation. Departments of Economics and Sloan School of Management, Massachusetts Institute of Technology (MIT). October 2009.

Summary of Best Practice programs

These programs are not necessarily *best practice*, for reasons discussed above. Rather, they represent two distinct approaches to Smart Energy Profiles implemented by program administrators.

Connexus Energy in central Minnesota began implementing its HER program in 2008. Connexus' program provides a monthly report to a large group of residential customers; the report contains two modules (1) The Social Comparison Module, which compares household electricity consumption over the past twelve months to the mean of its comparison group in the twentieth percentile, and (2) The Action Steps Module, which includes energy conservation tips (behavioral) and retrofit measures offered through Connexus' other programs. A recent evaluation of Connexus' HER program, which compared changes in household energy use in the test group to that of the control group (who did not receive the report) showed annual electricity savings of approximately two percent in the test group (those receiving the report for a year).

Duke Energy Kentucky's Personalized Energy Report (PER) pilot program also delivers customized home energy use information to residential customers. The PER program is provided to qualified residential customers who complete a basic home energy survey, either on-line or mailed-in. The PER is then produced on-line, or mailed to participants, depending on the customer's preference. The PER the report evaluates energy usage in the entire home and provides recommendations, many of which are very low cost, to the consumer who may later undertake some of these actions. Participants also receive six free CFLs.

Connexus' program design and costs are very similar to the Companies' proposed SEP program, as shown in Tables 15 and 16. Note that while the data shows higher first year market penetration for Connexus' program, they are also a much smaller utility than the Companies, totaling 96,000 residential customers. Because of the similarity in program design, we would expect the Companies' program to perform similarly to Connexus', as well to a similar pilot run by the Sacramento Municipal Utility District (SMUD), which also resulted in evaluated annual energy savings of approximately two percent in for the test group receiving the Smart Energy Profile.¹⁵

Based purely on program design, ICF believes that the Companies' proposed energy report program is superior to Duke's PER pilot. The SEP program will have significant market penetration, which will be challenging for the PER pilot to achieve since participants enroll voluntarily.¹⁶ The SEP program also contains a social marketing component (comparing peer energy use), which research shows has been very effective at reducing customer energy use. Further, the SEP program has a built-in experimental design that helps ensure precise measurement of participant savings.

¹⁵ Summit Blue Consulting. Impact Evaluation of Positive Energy SMUD Pilot. May 2009.

¹⁶ Note that programs similar in design to the Companies' have shown very low opt-out rates (less than one percent).

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Table 16: Smart Energy Profile Program Comparison

		Best Practice Program: Less Mature Market	Best Practice Program: More Mature Market
Program Element/ Metric	LG&E / KU	Connexus Energy (Central Minnesota), Home Energy Report Program Start Year: 2008	Duke Energy Kentucky, Personalized Energy Report (PER) Program Start Year: FY2009
Program Objective(s)	The objective of this program will be to educate customers about their energy consumption, encourage them to reduce consumption and empower them with tools, techniques and technology to use energy more wisely.	The objective of this program is to reduce customer home energy use through targeted, customized residential energy use education and marketing.	This program was designed to overcome market barriers amongst residential customers such as lack of consumer education and knowledge of specific ideas for reducing energy usage. The customized energy report is designed to help customers better manage their energy costs.
Target Market(s)	Residential. High energy users.	Residential. Those receiving the report must have one full year of electricity bill history as of the program start.	Residential single family customers who have not received measures through Duke's Home Energy House Call or Residential Conservation & Energy Education programs within the last three years.
Market penetration	14% after Year 1, 50% after Year 3	41%	NA
Measures	There are no specific measures offered by this program beyond the provision of the home energy report. The report will recommend measures available through other LG&E / KU programs based on the customer's energy use profile.	There are no specific measures offered by this program beyond the provision of the home energy report. The report will recommend measures available through other utility programs based on the customer's energy use profile.	In addition to the home energy report, participating customers will also receive 6 free CFLs.
Incentive structure	There are no specific incentives offered by this program beyond the provision of the home energy report. The report will recommend incentives available through other LG&E / KU programs based on the customer's energy use profile.	There are no specific incentives offered by this program beyond the provision of the home energy report. The report will recommend incentives available through other utility programs based on the customer's energy use profile.	The report will recommend incentives available through other utility programs based on the customer's energy use profile. Participating customers will also receive 6 free CFLs.
Marketing	The report will promote and recommend program and efficiency measures likely to benefit the customer based on individual household energy usage patterns	The report will promote and recommend program and efficiency measures likely to benefit the customer based on individual household energy usage patterns	The paper PER program begins with a letter to the customer offering the paper PER if they return a short energy survey about their home.

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Program Element/ Metric	LG&E / KU	Best Practice Program: Less Mature Market Connexus Energy (Central Minnesota), Home Energy Report Program Start Year: 2008	Best Practice Program: More Mature Market Duke Energy Kentucky, Personalized Energy Report (PER) Program Start Year: FY2009
Delivery	The Companies will use existing customer data, such as service point information, account information and current energy consumption to develop targeted, customer home energy reports that will be mailed to customers at regular intervals throughout the year (e.g. monthly). Elements that are presented in the report may include a comparison of the customer's home energy use vis-à-vis their peers (residents with similar home/building characteristics), presentation of the customer's current energy use versus their historical use, as well as customized and targeted messages to help the customer reduce energy use. The report will promote and recommend program and efficiency measures likely to benefit the customer based on individual household energy usage patterns.	The program mails a monthly report to participants separate from their utility bill. The report has two parts. The first part compares the customer's monthly energy use against that of their peers (similar households), and against their own historical energy use. The second part includes action steps that suggests behavioral and retrofit measures to reduce customer energy use; these suggestions are targeted to different households based on historical energy use patterns and demographic characteristics.	The customer completes an energy survey and this data is used to generate a personalized energy report based on information the customer provided. The report is either mailed to the consumer or created in real time online. The report evaluates energy usage in the entire home and provides recommendations, many of which are very low cost, to the consumer who may undertake some of these actions.

Discussion of the Companies' versus Others' Programs

The Companies' proposed SEP program is an innovative customer education initiative based on social marketing concepts that have proven successful when applied to other business models.¹⁷ The SEP program is designed after comparable pilot programs implemented by other utilities across the nation that show promising evaluated savings results of approximately two percent average annual savings per participant.¹⁸ The Companies are in the advantageous position of not being the "guinea pig" implementing this innovative program while the program is still "cutting-edge" – to ICF's knowledge, no other IOU in Kentucky has proposed the same program design.

ICF finds that the Companies' proposed SEP program is designed consistent with similar innovative social marketing programs implemented in by other program administrators that have

¹⁷ Research shows the peer pressure is a powerful motivator. The SEP program applies this research by presenting to the test group their home energy use vis-à-vis. that of their "peers" (customers with similar homes).

¹⁸ Note that savings persistence attributable to this program is not well-understood.

resulted in significant, very cost-effective residential energy savings. The Companies' planned costs and savings are reasonable and consistent with that of similar programs.

Connexus' program design and costs are very similar to the Companies' proposed SEP program, as shown in Tables 16 and 17. Note that while Table 15 shows higher first year market penetration for Connexus' program, they are also a much smaller utility than the Companies, totaling 96,000 residential customers. Because of the similarity in program design, we would expect the Companies' program to perform similarly to Connexus', as well to a similar pilot run by the Sacramento Municipal Utility District (SMUD), which also resulted in evaluated annual energy savings of approximately two percent in for the test group receiving the Smart Energy Profile.

Based purely on program design, ICF believes that the Companies' proposed energy report program is superior to Duke's PER pilot. The SEP program will have significant market penetration, which will be challenging for the PER pilot to achieve since participants enroll voluntarily. The SEP program also contains a social marketing component (comparing peer energy use), which research shows has been very effective at reducing customer energy use. Further, the SEP program has a built-in experimental design that helps ensure precise measurement of participant savings.

Conclusions

The Companies' proposed SEP program is innovative and designed for success. In order to help ensure its success, ICF suggests that the Companies follow the best practices listed above. Further, persistence of savings is not well understood for these types of programs; therefore the EM&V plan should include an approach for estimating SEP program savings beyond the first year.

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Table 17: Smart Energy Profile Program Results Comparison

Program Element/ Metric	LG&E / KU		Best Practice Program: Less Mature Market	Best Practice Program: More Mature Market
	Year 1	Year 3	Connexus Energy (Central Minnesota), Home Energy Report 2008–2009	Duke Energy Kentucky, Personalized Energy Report (PER) FY2010
Annual Energy Savings MWh	29,664	58,078	12,675	NA
Annual Demand Reduction kW	5,693	11,117	NA	NA
Annual Incentive Costs	\$0	\$0	NA	NA
Annual Non-Incentive Costs	\$1,370,800	\$2,240,807	NA	NA
Annual Budget	\$1,370,800	\$2,240,807	\$507,000	\$153,000
Participants	105,000	205,000	39,000	NA
kWh/Participant	283	283	325	NA
kW/Participant	0.1	0.1	NA	NA
% Budget incentive costs	0%	0%	NA	NA
% Budget non-incentive costs*	100%	100%	NA	NA
% Budget EM&V	0%	0%	NA	NA
\$/1st year kWh	\$0.05	\$0.04	\$0.04	NA
\$/1st year kW	\$241	\$202	NA	NA
Cost/Participant	\$13	\$11	\$13	NA
NTG Ratio	NA	NA	NA	NA

*Includes % EM&V costs

Source(s): *Hunt Alcott. Social Norms and Energy Conservation. Departments of Economics and Sloan School of Management, Massachusetts Institute of Technology (MIT). October 2009.*

Duke Energy. Annual Status Report and Adjustment of the 2009 DSM Cost Recovery Mechanism. Case No. 2009-00444. Filed with the Kentucky Public Service Commission November 16, 2009.

Hamilton Consulting. Plans for EM&V, Duke Energy.

5.2.2. Residential Incentives

Description of the Companies' Program

The Companies' proposed Residential Incentives program will deliver a wide range of energy efficiency measures and services that are cost-effective, but are not included in the Companies' other residential offerings. The program would promote and provide incentives for ENERGY STAR appliances, efficient HVAC equipment, and window film. ICF's understanding is that the Companies are proposing to promote these measures not only because the measures are cost-effective, but because the Companies received feedback from customers that there is demand for these efficient products. The Companies have conducted research on the relevant market channels and end-users and believes that it has sufficient understanding of the market to effectively deliver a program around these measures.

Components of Best Practice Programs

Residential Incentives contains distinct program elements, each of which has unique best practices: these include elements of ENERGY STAR Products-type programs and Efficient HVAC-type programs:

Best practices of programs that promote ENERGY STAR products include:

- Leveraging of the ENERGY STAR brand. This can be achieved by becoming an ENERGY STAR Program Sponsor and/or building public awareness of the ENERGY STAR brand. Activities key to building ENERGY STAR brand awareness include:
 - a. Educating retailers and ensuring that ENERGY STAR is promoted on retail floors; and
 - b. Developing partnerships with suppliers.
- Spending incentive dollars upstream and midstream, where possible. Such a top-down approach helps transform the market throughout the product stream and makes participation easy for customers through point-of-purchase (instant) rebates.

The following summarizes components of program delivery common amongst best practice residential HVAC programs:

- The use of HVAC contractors as the main vehicle for program deployment. Contractors receive program training and are paid incentives for installing efficient units. This helps keep participation simple for customers. Contractors are also the main delivery method for window film installation.
- Training and education of HVAC distributors;
- Quality Install (QI) training and incentives;
- An AC tune-up element, or cross-promotion with an AC tune-up program; and
- A process for verifying contractor work, including on-site inspections.

Summary of Best Practice Programs

ICF choose three distinct program types to compare to the Companies' proposed Residential Incentives program since the program contains elements of each of these program types, but is

not directly comparable to any one program type. The three best practice programs we selected are: San Diego Gas & Electric's (SDG&E) Residential Retrofit Single Family program, the U.S. EPA's Rapid Deployment Energy Efficiency (RDEE) Residential Efficient Heating and Cooling program (which was reviewed as a best practice program by the National Action Plan on Energy Efficiency in the course of EPA's development of the RDEE Toolkit, in spring 2009), and the Residential Retail Products program, which is run jointly by Connecticut Light & Power (CL&P) and United Illuminating (UI).

SDG&E's Residential Retrofit Single Family program is part of a California statewide program effort of the same name. In 2004, the Residential Lighting and Home Energy Efficiency Rebates (HEER) Programs were combined to form the Statewide Single-Family Energy Efficiency Rebate (SFEER) Program to streamline internal operations for the utilities. The SFEER Program includes a diverse array of energy efficiency measures including home improvement products, heating and cooling equipment, lighting, appliances, and pool equipment. The 2004-2005 Program targeted all residential customers paying a Public Goods Charge and residing in dwellings of four units or less, including condominiums and mobile homes.¹⁹

The objectives of the RDEE Residential Efficient Heating and Cooling program are to increase sales of efficient (ENERGY STAR qualified, or better) heating and cooling equipment in replacement, retrofit, and new construction opportunities, and to improve the operating efficiency of equipment through tune-ups of existing units and Quality Installation (QI) of new units. HVAC contractors are the main vehicle for deployment of this program. Contractors must complete trainings for AC tune-ups (refrigerant charge, coil cleaning, filter change, and a blower speed test), AC quality installation (proper sizing, refrigerant charge, and air flow test), furnace quality installation (proper sizing, air flow adjustment, furnace on-rate check), and other program requirements.²⁰

CL&P and UI's Residential Retail Products program is essentially an ENERGY STAR Products program that provides incentives for CFLs and ENERGY STAR appliances. In both the lighting and appliances segments, the program uses Negotiated Cooperative Promotions (NCPs), which the Companies' find to be a successful approach to increase stocking and sales of efficient products at considerably lower cost than traditional coupons and rebates. NCPs involve partnerships between the program and retailers and manufacturers and are structured with underlying memoranda of understanding (MOUs) that tie payment of incentives to the Companies' receipt of store-level sales data.²¹

¹⁹ Itron. 2004/2005 Statewide Residential Retrofit Single-Family energy Efficiency Rebate Evaluation. October 2, 2007. Best Practice Benchmarking for Energy Efficiency Programs. Summary Profile Report. CA Single Family EE Rebates. <http://www.eebestpractices.com/Summary.asp?BPProgID=R24E>.

San Diego Gas & Electric Company – Statewide residential Single Family Home Energy Efficiency Rebates (PGC) – SDGE service area – IOU Statewide Program – Jan-06 Report.

²⁰ U.S. EPA. Rapid Deployment Energy Efficiency Toolkit, Planning and Implementation Guides. October 2009.

²¹ Connecticut Light & Power and United Illuminating. 2009 Conservation and Load Management Plan. October 2008.

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Table 18: Residential Incentives Program Comparison

		Best Practice Program: Market Maturity High	Best Practice Program: Market Maturity Mid	Best Practice Program: Market Maturity Mid-to-Low
Program Element/ Metric	LG&E / KU	San Diego Gas & Electric (Sempra), Residential Retrofit Single Family Program Program start year: 2001	U.S. EPA, Rapid Deployment Energy Efficiency (RDEE) Toolkit, Residential Efficient Heating and Cooling Program Program start year: NA	Connecticut Light & Power and United Illuminating, Residential Retail Products Program start year: 2000
Program Objective(s)	Encourage customers to purchase various ENERGY STAR products, HVAC equipment and window films.	Achieve energy savings and demand reduction.	The objectives of this program are to increase sales of efficient (ENERGY STAR qualified, or better) heating and cooling equipment in replacement, retrofit, and new construction opportunities, and to improve the operating efficiency of equipment through tune-ups of existing units and quality installation of new units.	Build awareness, acceptance and market share of ENERGY STAR lighting, appliances and electronics.
Target Market(s)	Residential	All residential customers paying a Public Goods Charge and residing in dwellings of four units or less, including condominiums and mobile homes.	This program targets HVAC contractors and homeowners with central air conditioners and furnaces.	Residential
Market Penetration	Build to 20,500 rebates per year by Year 3	NA	4% after 3 years	2,409,313 (units)
Measures	HVAC, ENERGY STAR appliances, window films.	HVAC, lighting, appliances, home improvement products, pool pumps.	ENERGY STAR Heating and Cooling equipment. AC Tune-ups. Quality Install (QI) of HVAC units.	ENERGY STAR lighting (CFLs), appliances, and electronics
Incentive Structure	Incentives will be paid directly to customers via mail-in rebates.	Lighting, upstream (manufacturers). Appliances, midstream (retailers). HVAC, midstream (installation contractors).	Incentives paid mid-stream to HVAC contractors (typically 50-75% of measure incremental costs)	Point of purchase and mail-in rebates.

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		Best Practice Program: Market Maturity High	Best Practice Program: Market Maturity Mid	Best Practice Program: Market Maturity Mid-to-Low
Program Element/ Metric	LG&E / KU	San Diego Gas & Electric (Sempra), Residential Retrofit Single Family Program Program start year: 2001	U.S. EPA, Rapid Deployment Energy Efficiency (RDEE) Toolkit, Residential Efficient Heating and Cooling Program Program start year: NA	Connecticut Light & Power and United Illuminating, Residential Retail Products Program start year: 2000
Marketing	Marketing will include retailer training and point-of-purchase displays, among other activities and collateral. A full marketing plan will be developed pending program approval.	Bill inserts direct mail, newspaper and radio advertising, email blasts, community events, and information from their web sites and phone centers. The IOUs also coordinated with market actors including manufacturers, distributors, retailers, contractors, and others.	Consumer collateral. Program Web site. HVAC contractor & distributor recruitment and training. Call center.	Direct mail. Publications in community and business newsletters. Attendance at ENERGY STAR sales events. General promotion of the ENERGY STAR label.
Delivery	The Companies will hire, through an RFP process, a 3rd party contractor to develop the appropriate application and documentation supporting customer purchases, provide QA/QC of rebate applications, and process rebate checks. All documentation will be submitted to the Companies for auditing and data retention. The Companies will have customer verification/audit rights as well.	For lighting, the program worked with lighting manufacturers to buydown the cost of CFLs. For appliances, the program worked with manufacturers to buydown the cost of the units in some areas; mail in rebates were used otherwise. For HVAC measures, the program worked with HVAC contractors, who received training and were paid incentives.	HVAC contractors are the main vehicle for deployment of this program.	Midstream and upstream partnerships with retailers and manufacturers - Negotiated Cooperative Promotions (NCPs).

Discussion of the Companies' versus Others' Programs

In general, ICF finds that Companies' analytical methodology leading to this proposed program is sound and consistent with our own experience planning similar programs in other jurisdictions, including Louisiana, Maryland, and Wisconsin. Further, ICF finds that the Companies' planned costs and savings are reasonable and appropriate for a new program of this nature operating in a relatively immature market.

Residential Incentives contains some distinct elements of best practice programs described above. There are many models for delivering residential programs of this nature; some utilities combine all program elements into an umbrella residential mass market program that includes lighting, HVAC, appliances, and home performance; others include each of these as distinct programs; some utilities combine lighting and appliances into one ENERGY STAR Products program. Ultimately, each utility needs to package and market its programs in a manner that results in the most cost-effective savings that can be achieved within its own territory. The packaging usually changes over time as markets and technologies evolve; this is a key reason why it is important for program administrators to retain flexibility in how they deliver their programs.

While ICF could not find one program exactly comparable to the Companies' proposed Residential Incentives initiative, this is only because the Companies are packaging particular elements of their residential portfolio differently from other utilities. Further, the Companies' cost and savings assumptions, which ICF reviewed and finds reasonable, show the program is cost-effective.

Conclusions

ICF suggests the Companies consider the following possible strategies for delivering each component of the proposed Residential Incentives program.

1. Coordinate and cross-promote the new HVAC equipment rebates together the existing AC tune-up program. This would allow the Companies to capitalize on their existing relationships with AC contractors developed through the AC tune-up program.
2. Coordinate and cross-promote the appliance rebate and window film elements of the Residential Incentives initiative with the existing Residential High Efficiency Lighting program. This could allow new Residential Incentives elements (appliance, window film) to be co-branded along with CFLs, and allow the Companies to capitalize on existing retailer relationships achieved through the current CFL program. If the Companies plan on promoting window film as a low-cost DIY measure that will eventually replace some portion of CFL savings, window film should be promoted, where possible, in the same retail channels as CFLs (e.g. Lowe's, Home Depot, hardware stores).

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Table 19: Residential Incentives Program Results Comparison

Program Element/ Metric	LG&E / KU		Best Practice Program: Market Maturity High	Best Practice Program: Market Maturity Mid	Best Practice Program: Market Maturity Mid-to-Low
	Year 1	Year 3	San Diego Gas & Electric (Sempra), Residential Retrofit Single Family Program 2004–2005	U.S. EPA, Rapid Deployment Energy Efficiency (RDEE) Toolkit, Residential Efficient Heating and Cooling Program 2009	Connecticut Light & Power and United Illuminating, Residential Retail Products Program start year: 2007
Annual Energy Savings MWh	8,544	16,291	CFLs: 60,457 (net) Non-lighting: 2,672 (net)	NA	62,000
Annual Demand Reduction kW	1,477	3,042	CFLs: 4,450 (net) Non-lighting: 1,257	NA	968
Annual Incentive Costs	\$942,500	\$1,772,500	\$6,254,533	NA	\$4,438,000
Annual Non-Incentive Costs	\$642,852	\$873,230	\$1,907,380	NA	\$1,524,000
Annual Budget	\$1,567,352	\$2,645,730	\$8,161,914	NA	\$5,962,000
Participants	11,700	20,500		10,000	2,409,313
kWh/Participant	730	795	NA	2,000 (varies by climate zone and fuel type)	26
kW/Participant	0.1	0.1	NA	0.2 (varies by climate zone)	<.01
% Budget incentive costs	60%	67%	77%	60%	74%
% Budget non-incentive costs*	40%	33%	23%	40%	26%
% Budget EM&V	5%	2%	3%	4%	NA
\$/1st year kWh	\$0.18	\$0.16	\$0.08	\$0.17	\$0.10
\$/1st year kW	\$1,061	\$870	\$470	\$1,900	\$6,159
Cost/Participant (rebate)	\$134	\$129	NA	\$400	\$2
NTG Ratio	0.87 (average across all measures types)		CFLs: 0.62 Non-lighting: 0.56	0.80	NA

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Program Element/ Metric	LG&E / KU		Best Practice Program: Market Maturity High	Best Practice Program: Market Maturity Mid	Best Practice Program: Market Maturity Mid-to-Low
	Year 1	Year 3	San Diego Gas & Electric (Sempra), Residential Retrofit Single Family Program 2004–2005	U.S. EPA, Rapid Deployment Energy Efficiency (RDEE) Toolkit, Residential Efficient Heating and Cooling Program 2009	Connecticut Light & Power and United Illuminating, Residential Retail Products Program start year: 2007

*Includes % EM&V costs

Source(s)

Itron. 2004/2005 Statewide Residential Retrofit Single-Family energy Efficiency Rebate Evaluation. October 2, 2007.
Best Practice Benchmarking for Energy Efficiency Programs. Summary Profile Report. CA Single Family EE Rebates. <http://www.eebestpractices.com/Summary.asp?BPProgID=R24E>. Retrieved 11-09.
San Diego Gas & Electric Company – Statewide residential Single Family Home Energy Efficiency Rebates (PGC) – SDGE service area – IOU Statewide Program – Jan-06 Report.

U.S. EPA. Rapid Deployment Energy Efficiency Toolkit, Planning and Implementation Guides. October 2009.

Connecticut Light & Power and United Illuminating. 2009 Conservation and Load Management Plan. October 2008.

5.2.3. Residential Refrigerator Removal

Description of the Companies' program

The objectives of the Companies' proposed Residential Refrigerator Removal program are to remove and recycle old and inefficient working secondary refrigerators and freezers from the grid, and to reduce environmental impacts associated with improper appliance disposal. The Companies' proposed program is based on a proven, cost-effective program design that has been run successfully by numerous program administrators around the country.

Components of Best Practice Programs

The following summarizes components of program delivery common amongst best practice residential appliance recycling programs; best practice programs:

- Partner with an experienced appliance recycling company who can provide cost-effective, turn-key program services.
- Have procedures in place (e.g., random inspections) to ensure that participants' units are working and in-use prior to pick-up.
- Ensure that scheduling is made simple for customers and that pick-ups are timely.
- Cross-promote other utility programs.
- Plan with evaluators early to ensure they have access to an appropriate sample of units for data logging.

Summary of Best Practice Programs

ICF chose two existing programs to compare against the proposed program: Oncor's Refrigerator Round-Up program, and Southern California Edison's (SCE) Appliance Recycling program. These programs represent best practice in program implementation in two different energy efficiency markets, one more mature (California) and one less mature (Texas). Both these programs partner with appliance recycling companies who provide turn-key program services, including:

- Scheduling
- Pick-up
- Recycling
- Program tracking
- Incentive fulfillment
- Assistance with program marketing

Oncor partners with the Appliance Recycling Centers of America (ARCA) to implement the Refrigerator Roundup program, which launched in 2004. The program offers an incentive of \$50 per working unit to customers. In 2008, the program recycled nearly 5,000 refrigerators and freezers in the Dallas region.

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SCE's Appliance Recycling Program launched in 1994, and partners with both ARCA and JACO Environmental to manage the program's recycling services. This program removes over 100,000 old units from the grid in the Southern California region every year.

Table 20: Residential Refrigerator Removal Program Comparison

Program Element/ Metric	LG&E / KU	Best Practice Program: Less Mature Market	Best Practice Program: More Mature Market
		Oncor, Refrigerator Round-up Program Start Year: 2004 Data year(s): 2008	Southern California Edison, Appliance Recycling Program Program Start Year: 1994 Data year(s): 2004–2005
Program Objective(s)	Remove and recycle old and inefficient working secondary refrigerators and freezers from the grid. Reduce environmental impacts associated with improper appliance disposal.	Remove operating spare refrigerators and freezers from customers' homes.	Reduce customer bills. Remove inefficient units from the grid. Reduce CFC emissions. Eliminate "hassle factor" of removing appliance(s) for customers.
Target Market(s)	Residential	Residential	Residential and small business
Market Penetration	Build to 10,000 units per year by Year 3	4,900 units recycled	120,000 units recycled
Measures	Refrigerator and freezer removal and recycling	Refrigerator and freezer removal and recycling	Refrigerator and freezer removal and recycling; limit of 2 units per customer per year; window ACs also eligible
Incentive Structure	\$30 per working unit	\$50 per working unit	\$35 per working unit (note: this amount was increased to \$50/unit in 2006)
Marketing	Targeted direct mail; full marketing plan developed	Direct mail, website, mass media, appliance dealers	Direct mail, media outlets; website, appliance dealers
Delivery	Turn-key program implementation through appliance recycling company.	Turn-key program implementation through appliance recycling company.	Turn-key program implementation through appliance recycling company.

Discussion of the Companies' versus Others' Programs

The Companies' proposed program is very similar in design to the example programs, as shown in the table below.²² The Companies propose that an established appliance recycling company will provide turn-key program services. All similar programs use this program delivery method, to ICF's knowledge. There are only two major appliance recycling companies in the U.S. who are experienced at working with utilities on efficiency programs. The Companies will benefit from lessons learned by either of these firms should it move forward with this initiative.

²² ADM Associates et al. Evaluation of the 2004-2005 Statewide Residential Appliance Recycling Program. Final Report. April 2008. Southern California Edison – Residential Appliance Recycling – SCE service area – IOU Statewide Program – Jan-06 Report

At this planning stage, the only difference between the proposed program and the example programs' is the incentive level. The Companies' proposed incentive is somewhat lower than incentives offered by other utilities; however ICF believes that the Companies' proposed incentive is appropriate in initial program years within the Companies' territory, which is a relatively immature market for energy efficiency. Because the program has not been offered before, customers will likely find an incentive of \$30 for removing and properly disposing of their old appliance to be an attractive offer. Note that SCE' per unit incentive in 2004-2005 was \$35, when the program was new, and was increased in subsequent years.

In general, ICF finds that the Companies' planning assumptions for program costs and savings are reasonable and appropriate. As shown below, based on The Companies' proposed program costs and net savings estimates, The Companies' program will cost approximately \$0.27 per kWh in Year 1, which is similar to the net cost of SCE's program; Oncor's cost per kWh is somewhat lower, although Oncor's savings estimates do not include free-riders (which, if included, would drive cost-effectiveness down). The Companies' total cost per unit (\$204) is also higher than SCE's (\$158), though not unreasonably high.²³

Conclusions

The Companies' proposed Refrigerator Recycling program contains many elements of best practice programs and the planned cost and savings are reasonable for such a program entering a relatively immature market. Although we believe the program plan generally reflects best practices, below, ICF provides some suggestions for The Companies' consideration

1. Establish a procedure for ensuring program compliance. The primary concern here is ensuring that the vendor is paying incentives only for working units.
2. Work with an evaluator from the start. Typically, program savings are estimated through a combination of data logging and participant and non-participant surveys. The evaluator will need to work with the recycling vendor to have a sample of units set aside for data logging.
3. Cross promote other programs. This program results in customer contacts at a number of points in the participation process, each of which provides an opportunity to promote other efficiency programs; one obvious synergy is the Residential Rebate program, which rebates ENERGY STAR appliances, including refrigerators and freezers.

²³ ADM Associates et al.

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Table 21: Residential Refrigerator Removal Program Results Comparison

Program Element/ Metric	LG&E / KU		Best Practice Program: Less Mature Market	Best Practice Program: More Mature Market
	Year 1	Year 3	Oncor, Refrigerator Round-up Program Start Year: 2004 Data year(s): 2008	Southern California Edison, Appliance Recycling Program Program Start Year: 1994 Data year(s): 2004–2005
Annual Energy Savings MWh	3,000	7,500	7,131 (gross)	120,949 (net)
Annual Demand Reduction kW	339	849	1,100 (gross)	NA
Annual Incentive Costs	\$120,000	\$300,000	\$471,416	NA
Annual Non-Incentive Costs	\$695,800	\$1,655,829	\$89,316	NA
Annual Budget	\$815,800	\$1,955,829	\$560,732	NA
Participants	4,000	10,000	4,900 (units)	
kWh/Participant	750	750	1,466 per refrigerator (gross; 1,701 per freezer (gross)	1,776 per refrigerator (gross; 1,415 per freezer (gross)
kW/Participant	0.1	0.1	0.26 per refrigerator (gross; 0.18 per freezer (gross)	NA
% Budget Incentive Costs	15%	15%	84%	88%
% Budget Non-Incentive Costs	85%	85%	16%	12%
% Budget EM&V	0%	0%	NA	3%
\$/1 st Year kWh	\$0.27	\$0.26	\$0.16	\$0.22
\$1 st Year kW	\$2,414	\$2,304	\$956	\$1,298
Cost/Participant	\$204	\$196	\$114 per unit	\$158 per unit
NTG Ratio	1.00	1.00	NA	0.72

*includes %EM&V costs

Source(s): *Oncor 2009 Energy Efficiency Plan and Report. April 1, 2009*

ADM Associates, et al. Evaluation of the 2004–2005 Statewide Residential Appliance Recycling Program. Final Report, April 2008. Southern California Edison – Residential Appliance Recycling – SCE Service Area – IOU Statewide Program — January 2006 Report

6. Overall Conclusions

Our review of the Companies' portfolio, and the context in which they were developed, leads us to the following conclusions:

- The Companies' proposed portfolio is consistent with evolving federal and state policies. In addition, the portfolio contains many elements of best practices, including cost-effectiveness, broad targeting, and flexible design.
- The Companies should commission a potential study or market characterization study, an action item the governor has also proposed for the state in his energy plan. The study results could be used to help plan programs that capture savings where potential is greatest and/or most cost-effective.
- Based on a market characterization study of the commercial sector, the Companies should develop additional programs targeting the commercial sector. Though the Companies continue to offer cost-effective programs, the portfolio could improve its cost-effectiveness through additional commercial programs. These could be achieved through the continuation of proven program types related to lighting, HVAC, and motors measures, or through the identification and targeting of customers interested in custom projects.

Our review of the Companies' proposed programs leads us to the following conclusions:

- **Load Control Management** - The Companies currently operate a successful load control program for residential and commercial customers, and are appropriately proposing to increase incentives to increase participation. The Companies should also consider and promote additional program options that would result in greater participation, lower program unit costs, and greater cost-effectiveness. Examples of these options include an enhanced incentive structure (that targets larger and high-use customers), multiple control options, and a real-time pricing element. In addition, because the program has significant market penetration, the Companies can use points of contact with these current participants to market other programs. In addition, the Companies' experience with demand response programs will help to develop a successful and cost-effective strategy for any eventual AMI deployment.
- **Commercial Conservation / Commercial Incentives** - The Companies should ensure that the audits are comprehensive and are continuing to motivate customers to participate in the program. In addition, the Companies should monitor the incentive structure and participation to ensure a broad mix of customer participation, which will result in cost-effective savings and achievement of program goals. The Companies should also continue to add prescriptive measures and work with trade allies to ensure their continued participation with and promotion of the program. In the future, the Companies should consider incorporating the EPA's Portfolio Manager benchmarking tool to provide customers with ongoing and post-project information regarding facility usage and savings. Since this initiative requires investment in equipment and personnel, the Companies should implement it once the expanded program has been running for a few years. This will allow the tool to be applied to a larger participant base, and ensure greater persistence of energy savings.
- **Residential Conservation/Home Energy Performance program** - The Companies should continue to consider Program Sponsorship through the EPA, in order to take advantage of existing resources and expand program participation. The Companies should also consider

the benefits of sponsorship in the context of a program design that uses the resource acquisition model, the market transformation model, or a hybrid approach (where the resource acquisition model evolves into the market transformation model). Through the market transformation model, the Companies would be able to build the program infrastructure and contractor network and reduce their day-to-day involvement. The availability of more contractors will increase competition, decrease customers' costs, and decrease the Companies' program costs.

- Low Income Weatherization (WeCare) program – The Companies should continue to coordinate carefully with local WAP and LIHEAP programs to ensure that WeCare's services complement those provided by the federal programs. Consistent with existing practice, the Companies should ensure that program funding is stable and consistent over time. The Companies should also continue to modify program offerings, based on EM&V or TPR, and existing market conditions and demand. To the extent that this program is similar to the Residential Conservation/Home Energy Performance program, in terms of measure types and contractor networks, the Companies should identify and implement additional cost efficiencies.
- Smart Energy Profile – ICF concludes that the SEP program's social marketing component will result in significant participant savings, and its built-in experimental design will help ensure precise measurement of these savings. As behavior-based programs gain entry into utility portfolios, the Companies should develop relationships with program implementers and utility program managers in order to adjust the design and delivery, or gain experience for their SEP program. The Companies should also incorporate other innovative pilots or programs, such as an in-home display program, into their portfolio.
- Residential Incentives – The Companies should coordinate and cross-promote their new residential programs with their existing residential programs. For example, the new HVAC equipment component is complementary with the existing AC tune-up program. This would allow the Companies to capitalize on their existing relationships with AC contractors. The Companies should also coordinate and cross-promote the appliance rebate and window film elements with the existing Residential High Efficiency Lighting program. This could allow new Residential Incentives elements (appliance, window film) to be co-branded along with CFLs, and allow the Companies to capitalize on existing retailer relationships achieved through the current CFL program.
- Refrigerator Recycling - ICF concludes that the program contains many elements of best practice programs and the planned cost and savings are reasonable for such a program entering a relatively immature market. ICF also suggests that the Companies establish procedures to ensure that the vendor is paying incentives only for working units. ICF also recommends that the vendor work with an evaluator from the start, in order to have a sample of units set aside for data logging. In addition, similar to the other residential programs, the Companies should engage in cross promotion. This program results in customer contacts at a number of points in the participation process, each of which provides an opportunity to promote other efficiency programs.