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March 13, 2015

Re: Joint Application of Louisville Gas and Electric Company, Association for Community Ministries, Inc., People Organized and Working for Energy Reform, and Kentucky Association for Community Action, Inc. for the Establishment of a Home Energy Assistance Program ***(Case No. 2007-00337)***

Joint Application of Kentucky Utilities Company, Kentucky Association for Community Action, Inc. and Community Action Council for Lexington-Fayette, Bourbon, Harrison, and Nicholas Counties, Inc. for the Establishment of a Home Energy Assistance Program ***(Case No. 2007-00338)***

Dear Mr. DeRouen:

As noted in the March 3, 2015 letter and in accordance with the Commission's orders in Case Nos. 2007-00337, 2007-00338, and 2010-00204, Louisville Gas and Electric Company and Kentucky Utilities Company hereby file a comprehensive report on the performance of their Home Energy Assistance programs.

Please do not hesitate to contact me if you would like to discuss this matter.

Sincerely,

Rick E. Lovekamp

Rick E. Lovekamp

Applied Public Policy Research

APPRISE

Institute for Study and Evaluation

Louisville Gas and Electric Company and Kentucky Utilities Company Home Energy Assistance Program Assessment

Final Report

December 2014

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Executive Summary

This report presents the findings from the 2014 Louisville Gas and Electric (LG&E) and Kentucky Utilities (KU) Home Energy Assistance (HEA) Program Assessment. The programs provide energy bill payment assistance to low-income households to help increase the affordability of utility bills, reduce arrearages, and improve payment patterns.

Evaluation

The goals of the evaluation were to analyze the program management, availability, and participation; assess impacts on payments, arrearages, collections actions, and weatherization participation; and make recommendations for program improvement. Five key activities were undertaken as part of this evaluation.

- *Background Research:* We reviewed program documents and interviewed LG&E and KU managers.
- *Agency Interviews*: We conducted telephone interviews with key agencies responsible for administering the LG&E and KU HEA programs, as well as three additional agencies that administer the KU program.
- *Program Data Analysis:* We conducted analysis of the LG&E and KU HEA program databases.
- *Participant Interviews*: We conducted in-depth telephone interviews with LG&E and KU HEA participants.
- *Program Impacts Analysis:* We analyzed LG&E and KU billing, payment, and collections data to estimate the impact of the HEA on customer payments, arrearages, LIHEAP Crisis assistance, disconnect notices, and services terminations.

Home Energy Assistance Program

Louisville Gas and Electric Company (LG&E) and Kentucky Utilities Company (KU) each offer a Home Energy Assistance (HEA) Program to assist the poorest households in their service territories least able to afford to pay their energy bills. Funded by ratepayers and shareholders, the programs provide fixed monthly credits to LIHEAP participants.

The HEA programs are expected to have positive impacts on energy bill affordability for low-income program participants. Expected outcomes include the following.

- Improved payment history for customers.
- Reduction in need for LIHEAP Crisis assistance.
- Reduction in arrearages.
- Reduction in loss of service due to non-payment.

- Energy conservation education provided to customers.
- Increase in energy savings in combination with weatherization programs.
- Improved quality of life as homes are weatherized and energy financial burdens are reduced.

LG&E HEA Program

LG&E HEA funding from the meter charges and the utility donations increased from $1.3 million in 2009 to $2.1 million in 2013 due to the increase in the meter charge to $0.25 per meter in January 2013. The funding was underspent by at least $200,000 in three of the five years examined. As of January 2014, the balance was over $800,000, and was still over $600,000 in October 2014.

LG&E's HEA has been administered by Affordable Energy Corporation (AEC), a nonprofit agency located in Louisville, Kentucky, since the program was first implemented. AEC works with three Community Action Agencies in the outlying counties to provide orientation and intake for customers who do not reside in their service area.

Customers must meet the following requirements to be eligible for the LG&E HEA.

- Active LG&E customer.
- Live in a single dwelling with a single meter.
- Do not live in rent-subsidized housing with a utility allowance.
- Not operate in-home business that involves high energy usage.
- Income at or below 130 percent of the poverty guidelines.
- Minimum monthly income of $100.
- Maximum arrearage of $1,000.
- Qualify for at least $200 annual HEA benefits (based on income and energy bills).

Customers have the following responsibilities.

- Attend an HEA orientation session and sign required paperwork.
- Apply for available weatherization programs and accept services if eligible.
- Enroll in LIHEAP each year.
- Practice energy conservation initiatives.
- Maintain a good payment history with LG&E.

Customers must recertify annually through application for LIHEAP. However, this is the only requirement. As long as their benefit is calculated to be at least $200, they will be re-enrolled in the HEA.

HEA participants receive monthly bill credits and one-time arrearage forgiveness the first time they enroll in the HEA. The monthly bill credit is a "modified fixed credit payment" that does not vary with changes in energy usage. Annual benefits are set at $200, $400, $700, or $1,000. The credit amount is based upon household income, household size, and utility bills for the past 12 months, with an adjustment for monthly normal heating degree days and any significant changes in utility pricing. The amount of LIHEAP received is also factored into the benefit amount.

The benefit is determined based on the amount of subsidy needed to make the energy bill affordable. The formula assumes that the participant can spend a certain percentage of income on energy, based on household size. The percentage ranges from twelve percent for a one-person household to five percent for a household with ten or more members.

Customers are removed from the HEA for the following reasons.

- Failure to maintain a current account.
- Failure to comply with program requirements.
- Refusal of weatherization services.
- Residency outside of the LG&E service area.
- Failure to maintain accurate and current address information.
- Submission of inaccurate information or the failure to disclose relevant information.

Customers receive three warning letters before being terminated from the HEA. If a customer is terminated from the HEA, the customer must remain off the program for a full year.

KU HEA Program

Total KU HEA funding from the meter charges and the utility donations increased from $0.86 million in 2009 to $1.59 million in 2013 due to the increase in the meter charge to $0.25 per meter in January 2013. The funding was underspent by at least $100,000 in every year except 2010 and over the five years, the program was underspent by over $600,000. As of January 2014, the balance was over $800,000, although spending increased with the increase in monthly benefits from $44 to $88 per month in March 2013 and the balance has been reduced to under $500,000 by October 2014.

The Community Action Council for Lexington-Fayette, Bourbon, Harrison, and Nicholas Counties (CAC) has primary responsibility for administering the KU HEA program. They have administered the program since it was introduced in December 2004.

The Kentucky Association for Community Action (KACA) which represents Kentucky's 23 CAAs has the following responsibilities.

- Monitor implementation and ongoing operations of the program.
- Track program expenditures.

CAC has nine neighborhood centers within its four county service area where customers can apply for the HEA. In addition to CAC, there are 17 other CAAs that are responsible for conducting outreach and enrollment. Their responsibilities are as follows.

- Outreach and recruitment.
- Data intake.
- Income verification and re-verification.
- Customer follow-up and data recording.

Customers must meet the following requirements to be eligible for the KU HEA.

- Active KU customer.
- Applicants must be responsible for home energy costs (bill in their name or spouse's name).
- KU electric as primary heating source ($25,319 was budgeted over the 3-year period for low-income customers whose primary heat source is not electric).
- Income at or below 130 percent of the poverty guidelines.

Customer responsibilities are as follows.

- Must apply for available weatherization programs and accept services if eligible.
- Must be enrolled in LIHEAP and direct payment to KU.
- Participants must sign a written agreement for the exchange of pertinent information between CAC and KU, and must sign a release from liability form provided by KU.
- Participants must re-certify annually by the anniversary date of enrollment.

Customers are required to accept weatherization if it is offered to them. They fill out the application when they apply for HEA. However, weatherization does not serve all of the participants because they do not have enough slots. Also, there are certain housing units that are not eligible for weatherization. Participants who live in units that are not eligible for weatherization are still permitted to receive HEA assistance. If CAC knew that an HEA participant refused weatherization, CAC would remove the participant from HEA. However, CAC would not always know that the customer refused weatherization.

CAC notifies participants annually by mail that it is time for them to re-verify. Participants are given more than 30 days to re-certify. The participant comes in to the office to complete an application with a copy of their bill and income verification for the previous month. Participants are sent an additional reminder letter and if they fail to re-verify income by the date indicated in the notification, they are removed from the HEA program.

The KU HEA provides a fixed monthly subsidy during the peak heating (December, January, February, and March) and the peak cooling (July, August, and September) months. This is an attempt to provide subsidies during the months when the need is greatest and avoid the accumulation of credits during low-usage months. The benefit is set at $88 for each of the seven months for all participants.

Customers are removed from the KU HEA for the following reasons.

- Voluntary departure.
- Default on disconnect notice payment terms.
- Failure to re-verify eligibility.

Customers are not removed from the program until their KU service is terminated or they do not re-certify.

Customer Feedback

This section provides a summary of the findings from the participant interviews. The research found that the LG&E participants had a better understanding of the program and were more likely to report that they received referrals and participated in weatherization. However, the program had a positive impact on participants in both the LG&E and KU HEA programs and respondents provided very positive comments about the assistance received and the agency staff that enrolled them.

- Participation
  - Ease of Enrollment – Most participants stated that it was very easy to enroll in the HEA and said that agency staff explained everything, were friendly, and were well organized. Only a few of the LG&E participants said that the required orientation session was a barrier, but about one quarter of the KU participants said that they were put on a waiting list and had a long delay prior to enrollment.
  - LG&E Orientation Session – Most LG&E participants said the session was very or somewhat helpful. They were most likely to mention the information on energy conservation. They also remarked about the clear instructions that were provided about the program.
- Understanding and Benefits
  - Customer Responsibilities – Most LG&E participants stated that they needed to pay their bill or re-enroll to remain in the HEA, but almost half of the KU participants did not know what the requirements were.
  - Program Benefits – When asked what they thought the benefits of the HEA were, respondents were most likely to state that it was the bill credit or lower bill, however, some mentioned weatherization, the ability to pay other bills, budget billing, and avoiding service termination.
  - Referrals – Thirteen of the 26 LG&E participants and five of the 21 KU participants stated that they were referred to other programs or services when they applied for the HEA. They were most likely to report that the service they were referred to was weatherization, but they also were referred for food and medical assistance.
  - Weatherization – When asked specifically about weatherization, 23 of the 26 LG&E participants and 9 of the 21 KU participants reported that they received weatherization. The majority of those who received weatherization stated that their bills were lower and their home was more comfortable.
- Impact
  - Utility Bill Payment – Participants were much less likely to report that they had a very difficult time paying their LG&E or KU bill when they were participating in the program than they did prior to participating in the program.

  - Meeting Other Needs – Participants were much less likely to report that they had a difficult time meeting their other needs when they were participating in the program than they did prior to participating in the program.

  - Importance of the HEA – When asked how important the HEA program had been in helping them to meet their needs, almost all respondents said that it had been very important.

- Satisfaction
  - Satisfaction with the Agency – Most respondents said that they were very satisfied with the agency. Respondents reported that the staff at the agency were helpful and respectful.

  - Satisfaction with the HEA Program – All of the LG&E HEA participants and 17 of the 21 KU participants reported that they were very satisfied with the program.

Program Impacts

This section provides a summary of the findings from the impact analysis.

- Affordability
  - The HEA program resulted in a large increase in affordability for LG&E participants who faced a high energy burden averaging 20 percent prior to benefit receipt. The participants received an average benefit of $649 in 2011 and $689 in 2012 resulting in a net decline in energy burden of about eight percentage points.

  - The KU HEA participants received lower average benefits and had a smaller affordability improvement. The 2011 participants received an average HEA benefit of $267 and the 2012 participants received an average HEA benefit of $349. This benefit reduced the mean energy burden from 26 percent in 2011 and from 30 percent in 2012. The net change was a decline of three percentage points in 2011 and four percentage points in 2012.

  - The LG&E HEA program provides benefits targeted to reduce energy burden, while the KU program provides the same benefit for all participants. As a result, the LG&E program had the greatest impact on energy burden for customers in the lowest poverty level groups. LG&E HEA participants with income at or below 50 percent of the poverty level had a net decrease in energy burden of 19 percentage points in 2011 and a net decrease of 18 percentage points in 2012. Despite the large reductions, these participants still had a mean energy burden of approximately 20 percent while receiving the HEA credit. Because the KU HEA credit is the same for all participants, the reduction in energy burden was uniform across poverty level. Participants with income at or below 50 percent of the poverty level had an initial mean energy burden of 61 percent in 2011 and 65 percent in 2012. Therefore, with the reduction of four percentage points in 2011 and two percentage points in 2012, their burden while participating in the HEA was still approximately 60 percent. The group with poverty levels between 101 and 130 percent had their burden reduced from nine percent or seven percent in the pre-enrollment period to six percent while participating in the program.

The affordability findings are displayed in Charts ES-1, ES-2, and ES-3.

Chart ES-1

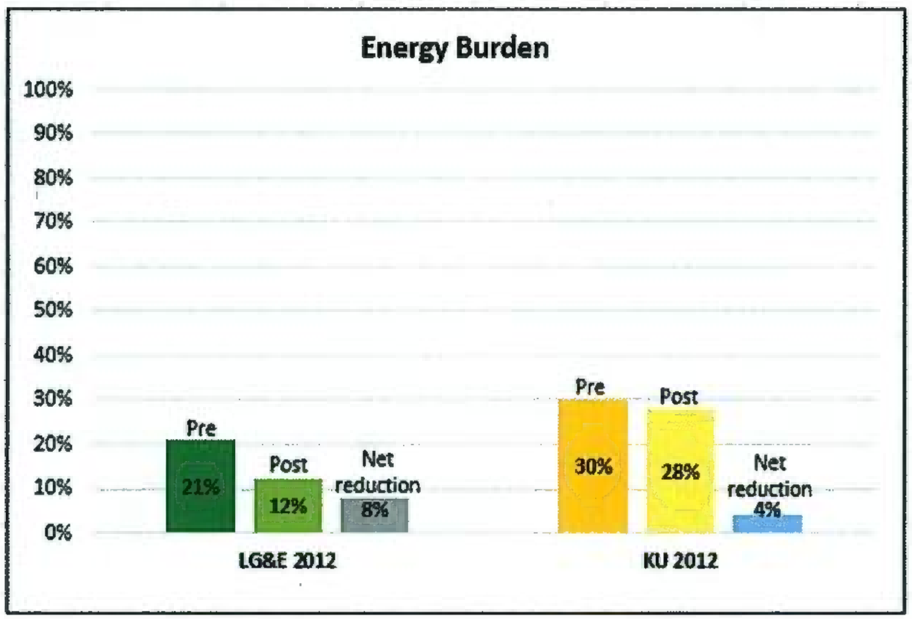


Chart ES-2

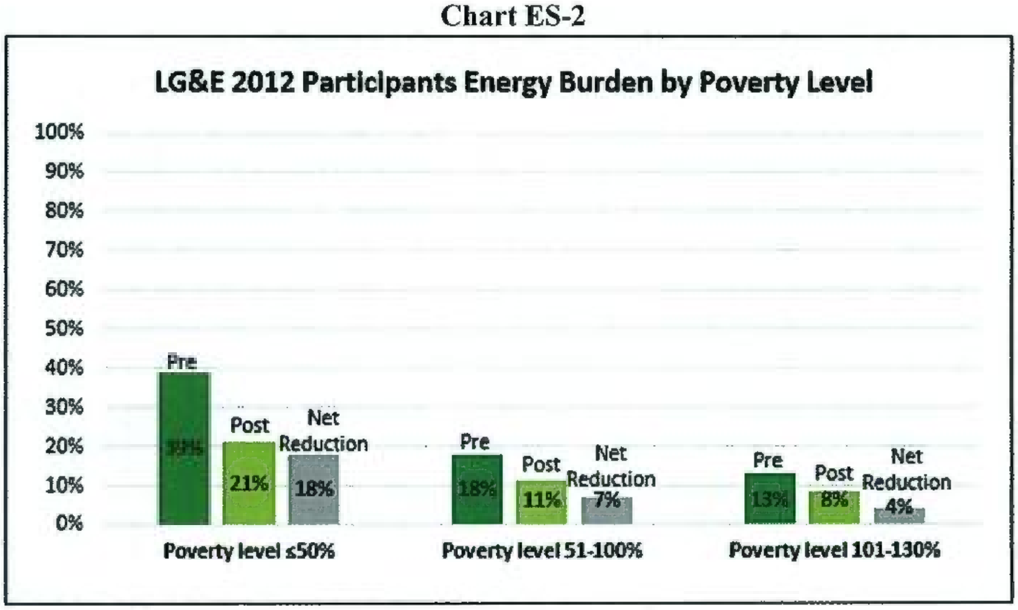
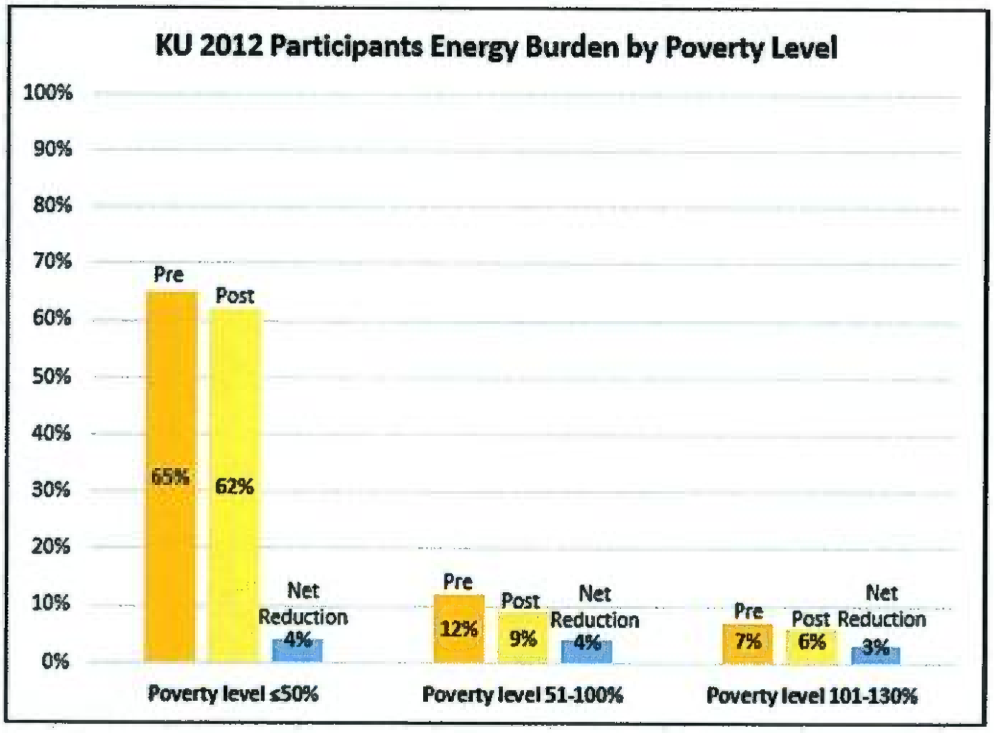


Chart ES-3

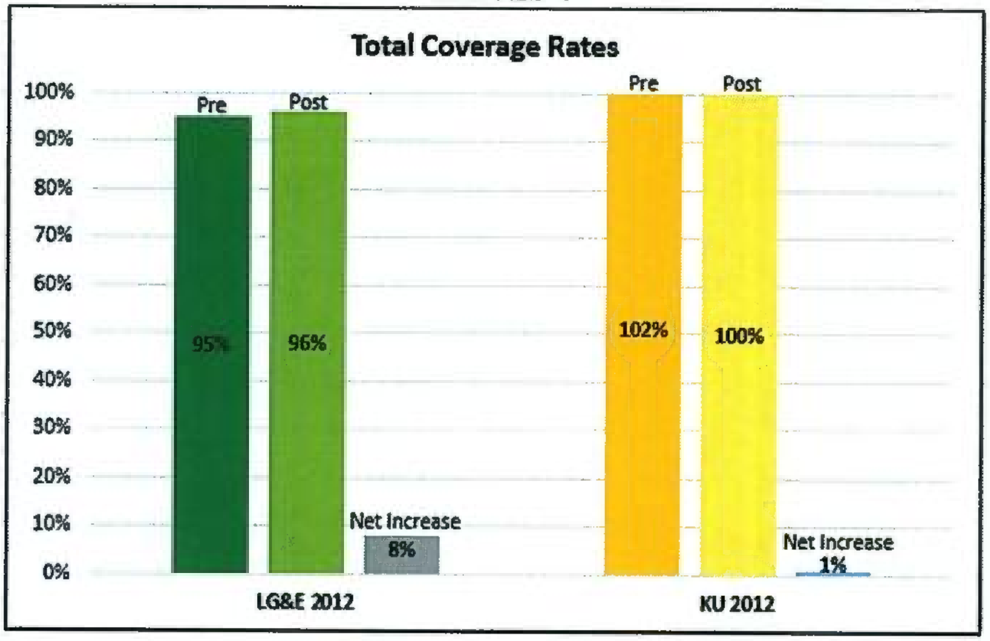


- Payment Impacts
  - Number of Customer Payments: The program resulted in a decline in payment regularity for both the LG&E and KU participants. Customers averaged 10 to 11 payments in the year prior to enrollment and had a net reduction of one payment over the year following program enrollment.

  - Total Coverage Rate: The total coverage rate is defined as the percent of the billed amount that is paid through both customer payments and assistance payments. LG&E participants had a net increase in their total coverage rate of eight to nine percentage points and KU participants had a net increase of one percentage point. The LG&E program generally had a larger impact for the lower poverty level groups due to the greater benefit. The KU program did not have the same level of impact. Results are displayed in Chart ES-4.

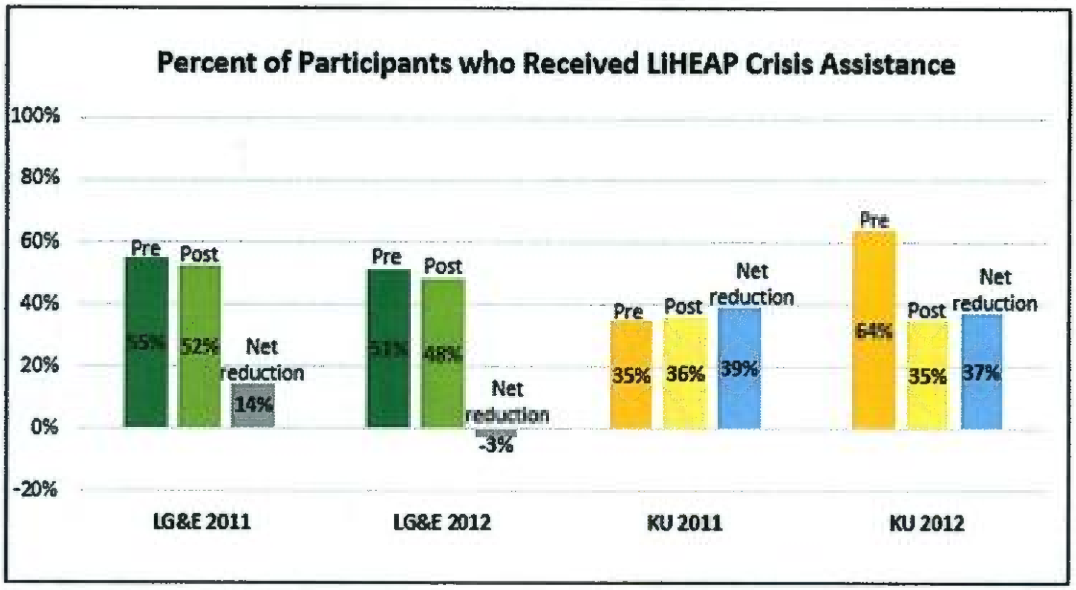
  - Balance: Average balances for HEA program participants showed a net decline of about $150 on average for LG&E participants and of about $100 on average for KU participants.

Chart ES-4



- LIHEAP Impacts: The LIHEAP impact results are not definitive due to data issues that are described in the analysis section, but point to the following potential impacts.
    - LIHEAP Crisis: The 2011 LG&E and the 2011 KU participants were less likely to receive LIHEAP Crisis assistance in the year following enrollment. Results are displayed in Chart ES-5.
    - LIHEAP Regular: The 2011 and the 2012 LG&E and KU participants were less likely to receive LIHEAP Regular assistance in the year following enrollment.

Chart ES-5



- Collections Impact
  - Brown Bills: LG&E HEA participants had fewer disconnect notices after enrolling in the program. While the 2011 participants averaged 6.7 notices in the pre period, they averaged 3.2 notices in the post period, and had a net reduction of 3.5 notices. KU participants averaged 5.3 notices in the pre period and 4.7 notices in the post period, and had a net reduction of 0.5 notices. Results are displayed in Chart ES-6.

  - Service Terminations: LG&E HEA participants were less likely to experience service terminations after enrolling in the program. Service terminations declined from about 33 percent in the 2012 pre period, for a net reduction of 17 percentage points. KU participants had a net decline in service terminations of about six percentage points, from their starting point of 27 percent with service terminations in the pre period. Results are displayed in chart ES-7.

Chart ES-6

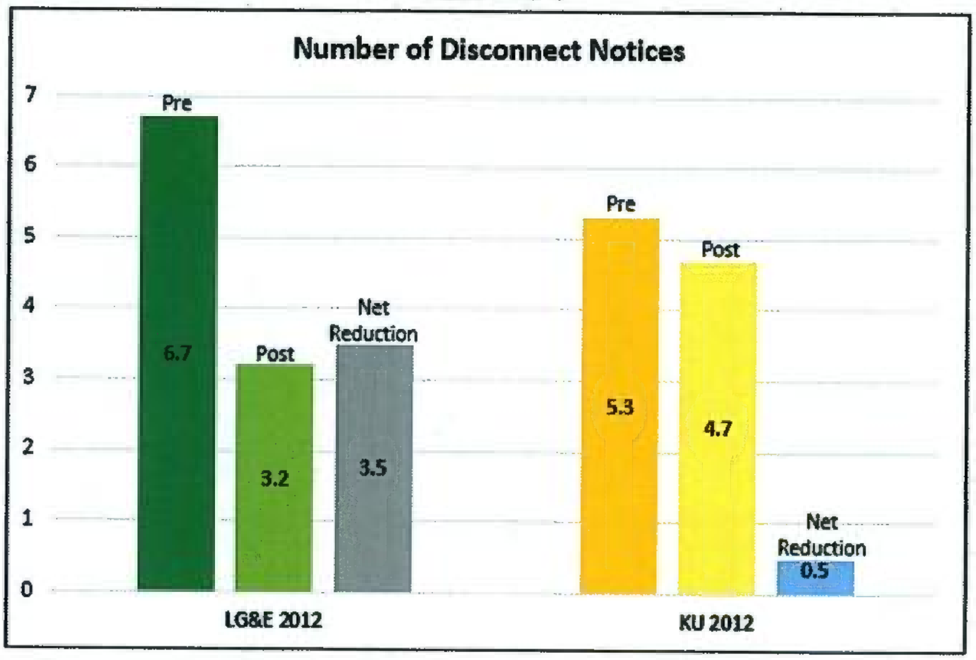
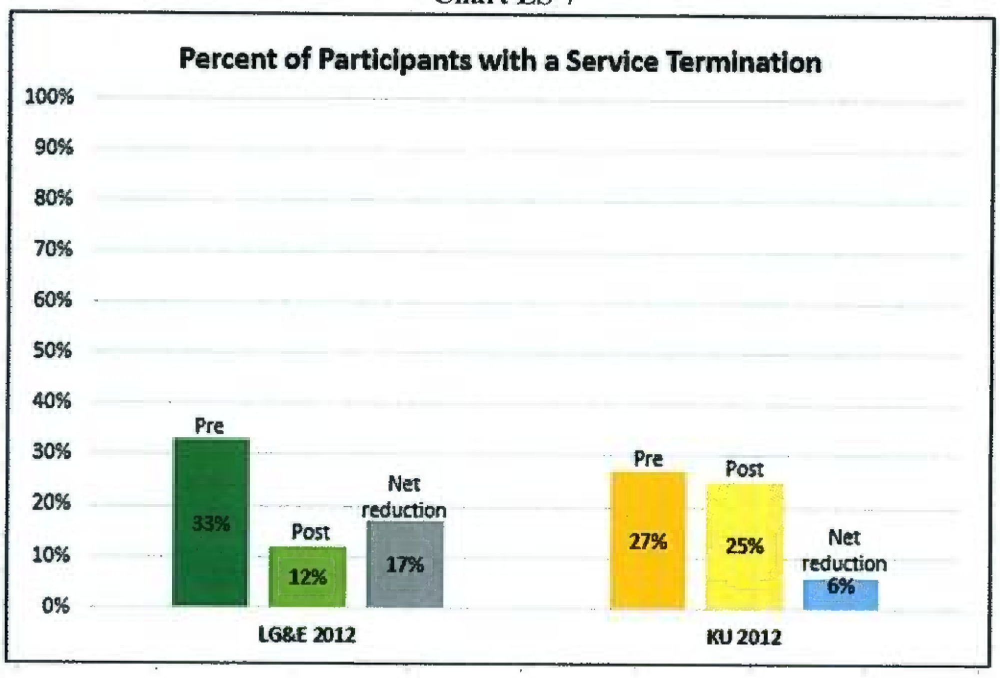


Chart ES-7



Key Findings and Recommendations

The LG&E and KU HEA Programs provide important benefits to low-income households by increasing the affordability of their energy bills, providing referrals to other services, and assisting customers to enroll in weatherization programs. The impacts of the program were found both in the participant interviews and the impact analysis results. The structure of the LG&E program results in greater benefits for program participants. This section provides a summary of recommendations based on all of the analyses in this evaluation.

Administration

1. Utility Management: LG&E/KU should provide greater oversight on the agencies' data collection process to ensure that the data required for management and evaluation are available. If necessary, LG&E/KU should provide support to the agencies to assist them in developing systems that provide adequate program data.

2. Agency Management: The agencies are an important link to the community and should continue to implement the programs.

3. HEA Program Data: The agencies need a system to ensure that clean data are available on program enrollment dates and removal dates, and that customer demographic data are associated with each enrollment. Benefits should be identified by date provided and type (credit or arrearage forgiveness).

4. LIHEAP Data: LG&E/KU should determine a procedure to ensure that LIHEAP Crisis and Subsidy data are available. (Note that LG&E/KU has corrected this issue as of November 2014.)

Participation

1. Enrollment Levels: LG&E and KU should develop a method to ensure that they use available funds to provide HEA benefits and do not have a large program balance.

2. County-Level Enrollment: KU should make an effort to distribute additional participation to counties other than Fayette. The utilities should compare their customer distributions to the participation distribution by county to determine if additional counties are underrepresented.

Enrollment, Weatherization, and LIHEAP

1. Program Orientation: KU should consider offering a formal orientation session and they should develop a guide for intake workers to ensure that important program and conservation information is provided at the time of HEA intake. (Note: such a guide was not provided to the evaluators with program materials.)

2. Weatherization Enrollment: As weatherization participation is an HEA requirement and a program metric, the agencies should track participation in their program databases and ensure that customers who refuse weatherization are removed from the HEA.

3. Weatherization Workshop: KU should also implement a workshop approach for participants whose landlords do not allow weatherization.

4. Re-Certification and LIHEAP Application: CAC should implement the LIHEAP auto enrollment process at the other agencies and AEC should implement this process for their HEA participants.

HEA Design and Impacts

1. Benefit Level: The KU program should consider higher benefit levels to achieve a significant impact for HEA participants.

2. Benefit Structure: KU should re-design their benefits to provide higher benefits to customers with higher energy burdens, rather than a constant benefit amount to all participants.

3. Arrearage Forgiveness: Low-income customers have a difficult time paying off previous bill balances, as they often find current bills unaffordable on their own without this additional burden. Arrearage forgiveness provides participants with the opportunity to begin the program with a fresh start, where they are up-to-date on paying their utility bills. KU should add an arrearage forgiveness component to their program.

I. Introduction

This report presents the findings from the 2014 Louisville Gas and Electric (LG&E) and Kentucky Utilities (KU) Home Energy Assistance (HEA) Program Assessment. The programs provide energy bill payment assistance to low-income households to help increase the affordability of utility bills, reduce arrearages, and improve payment patterns.

A. *Evaluation Objectives and Activities*

The goals of the evaluation were to assess the following.

- HEA Management – How is the program managed? What is the involvement of LG&E and KU in the program? Is their adequate monitoring of the HEA?
- HEA Availability – Is the program available throughout the territory and allocated effectively across the territory?
- HEA Participation – How many LG&E and KU customers participate in the HEA?
- Participant Demographics – How do LG&E and KU participant characteristics differ?
- HEA Movement – How often do customers move in and out of the program? Does the program provide short-term or long-term benefits to participants?
- HEA Impacts – How does the program impact the following customer parameters?
  - Payment Behavior
  - Arrearages
  - LIHEAP Crisis Assistance
  - Disconnect Notices
  - Service Terminations
  - Weatherization Participation

Five key activities were undertaken as part of this evaluation.

- *Background Research:* We reviewed program documents and interviewed LG&E and KU managers.
- *Agency Interviews*: We conducted telephone interviews with key agencies responsible for administering the programs and three of the other KU agencies.
- *Program Data Analysis:* We conducted analysis of the LG&E and KU HEA program databases.
- *Participant Interviews*: We conducted in-depth telephone interviews with LG&E and KU HEA participants.

- *Program Impacts Analysis:* We analyzed LG&E and KU billing, payment, and collections data to estimate the impact of the HEA on customer payments, arrearages, LIHEAP Crisis assistance, disconnect notices, and services terminations.

B. *Organization of the Report*

Five sections follow this introduction.

- Section II – Home Energy Assistance Program: This section describes the design and implementation of LG&E and KU's Home Energy Assistance Programs.
- Section III – Participant Interviews: This section provides a summary of the findings from the in-depth participant telephone interviews.
- Section IV – Program and Participant Statistics: This section provides descriptive statistics on the characteristics of the participants and the benefits they received.
- Section V – Impacts: This section analyzes the impacts of the HEA on affordability, customers' payment practices, arrearages, and collections actions.
- Section VI – Summary of Findings and Recommendations: This section provides a summary of the key findings and furnishes recommendations for the HEA based on the analyses in this report.

APPRISE prepared this report under contract to LG&E and KU. LG&E/KU facilitated this research by furnishing data and information to APPRISE. Any errors or omissions in this report are the responsibility of APPRISE. Further, the statements, findings, conclusions, and recommendations are solely those of analysts from APPRISE and do not necessarily reflect the views of LG&E/KU.

II. Home Energy Assistance Programs

Louisville Gas and Electric Company (LG&E) and Kentucky Utilities Company (KU) each offer a Home Energy Assistance (HEA) Program to assist the poorest households in their service territories least able to afford to pay their energy bills. Funded by ratepayers and shareholders, the programs provide fixed monthly credits to LIHEAP participants.

The HEA programs are expected to have positive impacts on energy bill affordability for low-income program participants. Expected outcomes include the following.

- Improved payment history for customers.
- Reduction in need for LIHEAP Crisis assistance.
- Reduction in arrearages.
- Reduction in loss of service due to non-payment.
- Energy conservation education provided to customers.
- Increase in energy savings in combination with weatherization programs.
- Improved quality of life as homes are weatherized and energy financial burdens are reduced.

This section of the report provides a description of the LG&E and KU programs. While the mandate for the programs are the same, the programs are designed and implemented very differently. The key differences between the programs are as follows.

1. Benefit Structure – The KU program provides a fixed $88 dollar credit for seven months of the year. The LG&E HEA program provides a benefit amount ranging from $200 to $1,000 depending on energy burden, where payments are made every month of the year and vary by month.

2. Arrearage Forgiveness – The LG&E HEA program provides arrearage forgiveness of up to $1,000 at the first enrollment and the KU HEA program does not provide arrearage forgiveness.

3. Enrollment – The KU program enrolls clients at the time they visit the office for assistance. The LG&E program invites LIHEAP recipients to attend an HEA orientation session and only those who attend the session may enroll in the LG&E HEA.

A. LG&E Home Energy Assistance Program

LG&E is a combined electric and gas utility. Most customers have combined services and are centralized in Jefferson County, Kentucky. LG&E provides electric service in nine counties in Kentucky and gas service in 17 counties. The territory is mostly urban.

History of the Home Energy Assistance Program

LG&E's Home Energy Assistance Program has been implemented as a temporary program through several Public Utility Commission (Commission) orders.

- Prior to the start of the HEA in 2004, LG&E offered the All Seasons Assurance Plan (ASAP) from 1993 to 2003. This program was created and administered by the Affordable Energy Corporation (AEC) and provided a "modified fixed credit payment" for its participants. AEC still refers to the HEA program as the All Seasons Assurance Plan.

- In June 2004 the Commission approved the terms of the Partial Settlement Agreement, Stipulation, and Recommendation filed in the LG&E rate case. The HEA was approved for a three-year term beginning on December 1, 2004. The program was funded by a $0.10 per month residential meter charge. In July 2004, LG&E filed an application for approval of specific parameters and an administrative budget for the HEA Program. The KU PSC granted an order on 11/24/2004 approving a three-year pilot of the HEA.

- In July 2007, LG&E filed an application to establish the Home Energy Assistance (HEA) Program as a permanent program. The KU PSC granted an order on 9/14/2007 extending the HEA for five years as a pilot program and continuing the $0.10 meter charge.

- In October 2010, the programs were extended through 9/30/15, with an evaluation to be filed by 3/15/15.

- The program continued to be funded with a progression of meter charges that increased from the original level of $0.10 to $0.25 in January 2013.

Budget and Expenses

Table II-1 displays the funding and expenses for the LG&E HEA from 2009 through 2013. The table shows that total funding from the meter charges and the utility donations increased from $1.3 million in 2009 to $2.1 million in 2013 due to the increase in the meter charge to $0.25 per meter in January 2013. The funding was underspent by at least $200,000 in three of the five years examined. As of January 2014, the balance was over $800,000, and was still over $600,000 in October 2014.

Table II-1
LG&E HEA Funding and Expenses
2009-2013

	HEA Funding			HEA Expenses		
	Meter Charges	Utility Donation	Total	Customer Benefits	Administrative Costs	Total
2009	$1,117,183	$184,711	$1,301,894	$1,561,997	$100,588	$1,662,585
2010	$1,166,442	$181,391	$1,347,834	$897,481	$116,142	$1,013,623
2011	$1,162,928	$306,487	$1,469,415	$1,095,951	$114,000	$1,209,951

	HEA Funding			HEA Expenses		
	Meter Charges	Utility Donation	Total	Customer Benefits	Administrative Costs	Total
2012	$1,241,043	$303,729	$1,544,772	$1,498,436	$114,000	$1,612,436
2013	$1,944,714	$180,000	$2,124,714	$1,610,868	$198,276	$1,809,144

Table II-2 displays the LG&E HEA Clean Start arrearage forgiveness benefits awarded from 2009 through 2013. The benefits ranged from a total of $31,143 in 2013 to $79,855 in 2009.

Table II-2
LG&E HEA Clean Start Benefits
2009-2013

	Clean Start Arrearage Forgiveness
2009	$79,855
2010	$40,645
2011	$71,757
2012	$50,986
2013	$31,143

Program Management and Administration

LG&E's HEA has been administered by Affordable Energy Corporation, a nonprofit agency located in Louisville, Kentucky, since the program was first implemented. AEC was organized in 1992 to provide assistance to low-income households and ensure that their basic energy needs are met. AEC is funded with up to ten percent of the HEA funds collected through the meter charge (trued up each January based upon actuals from the prior calendar year) and is responsible for the following program activities.

- General policy and administration of the program.
- Daily programmatic and financial management.
- Customer intake and recertification.
- Reporting and communicating with LG&E.
- Financial audits and/or reviews.
- Maintaining program and computer files.
- Providing case management to customers.
- Reminding HEA participants to sign up for LIHEAP.
- Helping HEA participants to schedule LIHEAP appointments if they are unable to do so themselves.

The case management services are provided to customers who become delinquent on their accounts. AEC is responsible for sending a late letter, a warning letter, and a program termination letter. They provide additional case management services including referrals to other agencies, adjusting due dates, and coordinating payment arrangements.

AEC works with three Community Action Agencies in the outlying counties to provide orientation and intake for customers who do not reside in their service area.

LG&E is responsible for the following administrative tasks.

- Including the meter charge that funds the HEA on each electric or gas meter monthly bill.
- Collecting the HEA funds.
- Disbursing the subsidy funds.
- Responding to general billing questions relating to whether an account has been credited with a subsidy payment.
- Reporting and evaluating the program.
- Providing administrative payments to AEC by no later than the 20th day of the month prior to service provision – one twelfth of ten percent of the annual proposed budget for administrative costs for the duration of the program.
- Processing electronic data files and payments from AEC on a daily basis and providing daily data files to AEC.
- Sharing information with AEC to ensure that HEA funds collected are balanced with funds distributed to participants for each program year. Unspent funds roll forward to the next year.
- Monitoring the programmatic process and the financial expenditures.
- Providing assistance to AEC with education and energy conservation efforts.
- Providing separate funds for an arrearage assistance program and emergency repairs.
- Notifying AEC of any customers that have filed bankruptcy in order for AEC to discontinue payments should the account not remain in good status.

Data is transferred between LG&E and AEC in the following ways.

- LG&E sends AEC a file electronically each day that includes detailed information about any HEA customer with a past due balance.
- AEC provides LG&E with customers to be added and removed from HEA.
- LG&E provides AEC with updated gas and electric usage data, and accounts that are no longer active.
- AEC electronically sends account numbers and scheduled payment amounts to LG&E.

AEC has access to LG&E's low-income portal. This portal provides live access to customers' account information.

Eligibility Requirements

Customers must meet the following requirements to be eligible for the LG&E HEA.

- Active LG&E customer.
- Live in a single dwelling with a single meter.
- Do not live in rent-subsidized housing with a utility allowance.
- Not operate in-home business that involves high energy usage.
- Income at or below 130 percent of the poverty guidelines.
- Minimum monthly income of $100.
- Maximum arrearage of $1,000.

- Qualify for at least \$200 annual HEA benefits (Based on income and energy bills).

Customers have the following responsibilities.

- Attend an HEA orientation session and sign required paperwork. Fifteen to 25 percent of invited customers attend the session and enroll in the program.
- Apply for available weatherization programs and accept services if eligible.
- Enroll in LIHEAP each year.
- Practice energy conservation initiatives.
- Maintain a good payment history with LG&E.

Enrollment

The following steps are taken to enroll customers in the LG&E HEA.

- Community Action Kentucky sends AEC a list of customers who received LIHEAP, have at least \$100 in monthly income, and have no more than \$1,000 in arrearages.
- AEC sends this list to LG&E to obtain energy usage and cost data, weather-normalized data, billing cycle information, basic account information, and account status.
- AEC calculates the benefit that the customer is eligible for. The customer is determined to be eligible for the HEA if the benefit is at least \$200.
- AEC selects randomly from this list of eligible customers.
- Selected customers are invited to attend an HEA orientation session. At the 2.5 hour orientation, customers complete enrollment forms and weatherization applications, HEA benefits and requirements are explained, and energy conservation education is provided (by Project Warm).
- Customers are invited to attend an orientation over the first half of the year. Customers receive back benefits for the earlier months of the year if they enroll after January, so that all customers who pay their bills should receive the full annual benefit.

Customers complete 3-5 forms at the orientation session

- Services agreement
- Release of information form
- Combined We Care/Project Warm Application
- Representative Authorization Letter (if applicable)
- Lease Verification Letter (if applicable)

Customers must recertify annually through application for LIHEAP. However, this is the only requirement. As long as their benefit is calculated to be at least \$200, they will be re-enrolled in the HEA.

AEC provides accommodations for disabilities or challenges. They have provided language interpreters and sign language communicators. If the customer is home bound, AEC will mail out enrollment forms and conduct an orientation over the phone.

In counties other than Jefferson, AEC coordinates the orientation session with local CAAs and utilizes their weatherization staff for the energy education component.

Benefits

HEA participants receive monthly bill credits and one-time arrearage forgiveness the first time they enroll in the HEA. The monthly bill credit is a "modified fixed credit payment" that does not vary with changes in energy usage. Annual benefits are set at $200, $400, $700, or $1,000. The credit amount is based upon household income, household size, and utility bills for the past 12 months, with an adjustment for monthly normal heating degree days and any significant changes in utility pricing. The amount of LIHEAP received is also factored into the benefit amount.

The benefit is determined based on the amount of subsidy needed to make the energy bill affordable. The formula assumes that the participant can spend a certain percentage of income on energy, based on household size. The percentage ranges from twelve percent for a one-person household to five percent for a household with ten or more members.

Benefit payments are provided directly on the customer's account as long as the customer remains current. Monthly payments are larger in the winter months, unless the customer is on a budget plan and then the annual amount is divided into even monthly payments.

Arrearage forgiveness is provided through the Clean Start component of the program that was initiated in 2005. The program provides up to $1,000 in arrearage forgiveness to new enrollees. If the customer is enrolling after January and has back benefits, the arrearage will first be paid with the back benefits and then arrearage forgiveness will be used to make up the remainder.

Participants who are re-certifying do not qualify for arrearage forgiveness, but customers who are off the program for one or more years and re-enroll may again qualify to receive arrearage forgiveness.

In 2007, an additional program component was added in that up to five percent of total HEA funds could be used to provide discretionary energy assistance to participants for paying arrearages or to provide energy assistance at a time of crisis. These funds can roll over to the next year if not disbursed. The proposed plan for these funds was that AEC would administer emergency funds to customers who lose their only source of income and are faced with a disconnection date if the following conditions are met.

- The customer can only have one brown bill for the program year to date.
- The customer must exhaust all other sources of funds including the Community Ministries, the Community Action Agency, and the Salvation Army. Documentation must be provided to AEC that funds are not available.
- The customer must submit a written statement to AEC explaining the loss of income.
- AEC will communicate with LG&E regarding the disconnect date and the minimum amount needed to keep the service on.
- AEC will pay the minimum amount to LG&E to keep the service on.
- AEC will not promote/advertise the funding source and will only use it when the customer notifies AEC of the situation.
- A customer would only be eligible one time during the program year.

AEC has not implemented these benefits to date because they have not had sufficient staff to develop the new program.

AEC refers the customers to Metro Call 311 and Metro United Way 211. Metro United Way 211 is supposed to have information on all of the agencies and grants. If the customer requests a specific type of assistance, AEC may give the customer a specific contact to call. The Association of Community Ministries provides assistance to customers in their zip codes or service areas. This assistance could include Dare to Care, or other assistance with rent, the water bill, or the LG&E bill. AEC also refers customers to organizations in their neighborhood.

Removal

Customers are removed from the HEA for the following reasons.

- Failure to maintain a current account.
- Failure to comply with program requirements.
- Refusal of weatherization services.
- Residency outside of the LG&E service area.
- Failure to maintain accurate and current address information.
- Submission of inaccurate information or the failure to disclose relevant information.

The following steps are taken prior to terminating a customer from the HEA.

- If the LG&E bill is not paid, AEC will send a Late Payment letter and possibly make a phone call informing the head of household of the missed payment. The monthly bill must be paid within 15 days of the date of the letter. AEC will make no further payments until the bill is paid in full. Case management services will be offered to suggest community resources that can help.
- If the bill is not paid within 15 to 20 days of the Late Payment Notice, a Warning Notice will be mailed stating that the bill must be paid within 15 days from the date of the letter or the customer will be terminated from the program.
- If the bill is not paid within 15 to 20 days of the Warning Notice, the customer will be terminated from the program.

If a customer is terminated from the HEA, the customer must remain off the program for a full year.

Customers can appeal their removal if they file the appeal within 30 days. The AEC manager will then make a recommendation to their board as to whether the customer should be re-instated on the program. Extenuating circumstances that would allow for flexibility include the following.

- A relative or close friend dying and expenses for travel or the funeral.
- Medical conditions.
- Decreases in income.
- Additional medication costs.

The customer must bring the bill up to date (and within the allocated time period) before being put back on the HEA.

Program Success, Challenges, and Changes

The LG&E HEA program manager at AEC reported that they have faced challenges with many landlords refusing to provide approval for weatherization services this year. AEC worked with Project Warm to provide a weatherization workshop for 30 customers who had this issue. The workshop provides information on covering windows with plastic and other do-it-yourself weatherization projects. AEC reviewed attendees' energy usage in the billing cycle before and after this workshop and found that usage declined for most of the workshop participants.

The program manager reported that customers face basic challenges with the program, including the following.

- Transportation to the agency. AEC holds the orientation sessions near a bus line and holds them throughout the county at libraries and community centers to maximize accessibility.

- Time to attend the HEA orientation. AEC makes an effort to provide orientations at different times – afternoon, evening, and some Saturdays. They send invitations out at least two weeks in advance, but customers sometimes have difficulty making time in their schedule.

- Motivation to attend the HEA orientation. Some customers do not want to take the time to attend the session or are in a state of crisis that makes it difficult for them to accept.

- Foreign language speakers who have problems communicating. In the past few years, AEC has seen more immigrants. AEC has had special orientations for customers who speak Arabic, Spanish, or other languages, and they hire translators as needed, including for sign language.

- Literacy may be an issue. Many customers can't read their mail or complete the paperwork.

- Crises that their participants face. Many customers are always in crisis because they cannot manage their budgets, and they are always late with their bill payment and get caught up outside of the required timeframe.

- Availability of photo identification with a current address. Some customers do not have a Kentucky identification. Early in the program, AEC accepted any form of identification, but they had some issues where customers had an out of state identification and were not living in the residence where they said they were living. AEC tries to use other identification but they often do not have bills in their name because they are in their spouse's name or another relative's name.

- Customers sometimes do not have the LG&E account in their name or their spouse's name. This is a requirement. If the spouse is no longer in the household, the participant must transfer the service into their name and update the account number.

- Skepticism is a common barrier. Many customers read the letter and do not think ASAP is a real program. AEC has made a big effort to spread the word about the program so potential applicants can check with trusted sources. AEC has a Facebook page that provides information about the program and updates on the program such as the LIHEAP schedule and the recertification process.

AEC tries to come up with alternatives to help their customers overcome these barriers. For example, they developed a special form for customers who live with relatives and do not have a lease and special forms for homebound customers who need to mail in enrollment forms and receive orientation over the telephone.

AEC would like to make the following program improvements.

- Upgrade their program database which has become outdated. AEC is currently in the process of documenting their current database so they can develop a new one.
- Increase AEC's capacity by adding staff, especially during orientation season.
- Set up a website and develop additional marketing materials, such as posters and brochures.
- Work with a translation service to translate invitations and forms and with an interpretation service to better communicate with non-English speaking participants.
- Work with other agencies to provide additional services to participants such as budgeting to provide more long-term solutions.
- Review the benefit calculation process to assess whether a cost of living adjustment or other benefit adjustment is needed. They would like to consider increasing the percentage benefit to cover a greater part of the bill.
- Re-allocate unused benefits from terminated and withdrawn participants to cover the deposit charge for participants that is needed to put the account in their name.
- Have LG&E send AEC a report of account changes at the beginning of the year to reduce the number of returned orientation invitations.
- Consider incentives to encourage applicants to attend the orientation, such as drawings for grocery gift cards or energy efficient fans.
- Consider providing assistance for participants to obtain photo identification if they do not have one.

B. KU Home Energy Assistance Program

KU is an electric only utility with customers served in 77 counties. The service territory is mostly rural.

History of the Home Energy Assistance Program

KU's Home Energy Assistance Program has been implemented as a temporary program through several Public Utility Commission (Commission) orders.

- In June 2004 the Commission approved the terms of the Partial Settlement Agreement, Stipulation, and Recommendation filed in the KU rate case. The HEA was approved for a three-year term beginning on December 1, 2004. The program was funded by a $0.10 per month residential meter charge. In July 2004, KU filed an application for approval of specific parameters and an administrative budget for the HEA Program. The KU PSC granted an order on 11/24/2004 approving a three-year pilot of the HEA.
- In July 2007, KU filed an application to establish the Home Energy Assistance (HEA) Program as a permanent program. The KU PSC granted an order on 9/14/2007 extending the HEA for five years as a pilot program and continuing the $0.10 meter charge.
- In October 2010, the programs were extended through 9/30/15, with an evaluation to be filed by 3/15/15.
- The program continued to be funded with a progression of meter charges that increased from the original level of $0.10 to $0.25 in January 2013.

Budget and Expenses

Table II-3 displays the funding and expenses for the KU HEA from 2009 through 2013. The table shows that total funding from the meter charges and the utility donations increased from $0.86 million in 2009 to $1.59 million in 2013 due to the increase in the meter charge to $0.25 per meter in January 2013. The table shows that the funding was underspent by at least $100,000 in every year except 2010 and that over the five years, the program was underspent by over $600,000. As of January 2014, the balance was over $800,000, although spending increased with the increase in monthly benefits from $44 to $88 per month in March 2013 and the balance has been reduced to under $500,000.

Table II-3
KU HEA Funding and Expenses
2009-2013

	HEA Funding			HEA Expenses		
	Meter Charges	Utility Donation	Total	Customer Benefits	Administrative Costs	Total
2009	$735,216	$121,664	$856,880	$688,862	$63,905	$752,767
2010	$772,281	$120,306	$892,586	$736,113	$89,449	$825,562
2011	$766,013	$243,513	$1,009,526	$796,532	$72,000	$868,532
2012	$816,697	$246,271	$1,062,968	$800,668	$86,236	$886,904
2013	$1,280,480	$307,500	$1,587,980	$1,371,920	$84,000	$1,455,920

Program Management and Administration

The Community Action Council for Lexington-Fayette, Bourbon, Harrison, and Nicholas Counties (CAC) has primary responsibility for administering the KU HEA program. They have administered the program since it was introduced in December 2004. Their responsibilities are as follows.

- Make contracts with other energy assistance providers in the KU service territory.
- Provide data support and services. They oversee the database that is used by all of the HEA intake agencies.
- Provide training and technical assistance to contracting Community Action Agencies' (CAA) staff.

The Kentucky Association for Community Action (KACA), which represents Kentucky's 23 CAAs, has the following responsibilities.

- Monitor implementation and ongoing operations of the program.
- Track program expenditures.

CAC has nine neighborhood centers within its four county service area where customers can apply for the HEA. In addition to CAC, there are 17 other CAAs that are responsible for conducting outreach and enrollment. Their responsibilities are as follows.

- Outreach and recruitment.
- Data intake.
- Income verification and re-verification.
- Customer follow-up and data recording.

Data is transferred between CAC and KU in the following ways.

- File sharing takes place on each business day.
- A true-up and verification file share takes place monthly.
- CAC transmits an enrollment file to KU for processing and sends a copy to KACA for ongoing monitoring.
- The annual re-verification of income is updated via an electronic file.

Eligibility

Customers must meet the following requirements to be eligible for the KU HEA.

- Active KU customer.
- Applicants must be responsible for home energy costs (bill in their name or spouse's name).
- KU electric as primary heating source ($25,319 was budgeted over the 3-year period for low-income customers whose primary heat source is not electric).
- Income at or below 130 percent of the poverty guidelines.

Customer responsibilities are as follows.

- Must apply for available weatherization programs and accept services if eligible.
- Must be enrolled in LIHEAP and direct payment to KU.

- Participants must sign a written agreement for the exchange of pertinent information between CAC and KU, and must sign a release from liability form provided by KU.
- Participants must re-certify annually by the anniversary date of enrollment.

Customers are required to accept weatherization if it is offered to them. They fill out the application when they apply for HEA. However, weatherization does not serve all of the participants because they do not have enough slots. Also, there are certain housing units that are not eligible for weatherization. Participants who live in units that are not eligible for weatherization are still permitted to receive HEA assistance. If CAC knew that an HEA participant refused weatherization, CAC would remove the participant from HEA. However, CAC would not always know that the customer refused weatherization.

Enrollment

The CAAs discuss the HEA program with potential participants when they come into the office. The staff explain the program and assess the customer's most recent KU bill for eligibility, including whether they have electric heat. Income is verified and filed at the agency. Customers are enrolled if there are open slots available. If slots are not available, customers are placed on a waiting list, and then placed on the program on a first come, first serve basis.

Customers normally come into the agency to apply for assistance. The customers may be coming in to apply for LIHEAP or one of the other funds. CAC can conduct outreach to anyone who cannot come in for assistance. CAC completes the application. They require proof of income and the KU bill with the account number. The customer must verify that the bill is in his or her name.

The intake worker does energy counseling during LIHEAP intake. The intake worker asks a set of questions that are in IRIS to get the conversation started about turning down the thermostat and taking other actions. CAC also provides handouts on energy conservation.

There are agencies who work with homebound customers. In those cases, the agency would start the application and then may go to the customer's home to have them sign the application and pick up the documentation. Some customers mail back some of the documents or the agency mails the application and has the customer mail it back. CAC can do this if there is a need. Additionally, some customers designate a representative, such as a relative, friend, or neighbor. The customer gives the representative permission to apply on behalf of the customer.

CAC notifies participants annually by mail that it is time for them to re-verify. Participants are given more than 30 days to re-certify. The participant comes in to the office to complete an application with a copy of their bill and income verification for the previous month. The CAC intake worker generates a new intake and completes anything that has changed. Participants are sent an additional reminder letter and if they fail to re-verify income by the date indicated in the notification, they are removed from the HEA program.

Benefits

The KU HEA provides a fixed monthly subsidy during the peak heating (December, January, February, and March) and the peak cooling (July, August, and September) months. This is an attempt to provide subsidies during the months when the need is greatest and avoid the accumulation of credits during low-usage months. The benefit is set at $88 for each of the seven months for all participants. (Benefits were previously set at $42 per month for the first three years of the program, increased to $44 per month, and then increased to $88 per month in March 2013.)

Discretionary energy assistance funding was allocated for up to five percent of the HEA funds, but this program was not implemented.

If customers come in to the agency because they are facing a problem paying their bill, the agency has other funds, and the customer is eligible, the customer would receive that assistance. This includes LIHEAP Crisis, other Winter Care funds, and private donations.

CAC's database system helps staff identify eligibility for other CAC and community programs. Direct services offered by CAC include child development services, other energy conservation programs, supportive housing, youth programming, and job search assistance. Many of the other agencies also have food banks. CAC refers clients to local food banks. CAC's computer system will prompt the intake worker if the customer is eligible for another program. For example, this may include the low income tax credit, or assistance from volunteers with their taxes.

CAC's IT office performs auto enrollment for all CAC HEA participants at the beginning of each LIHEAP season. HEA participants apply for LIHEAP at the other agencies.

Clients complete applications for the Kentucky Weatherization Assistance Program and the WeCare Program, the low-income weatherization program offered by KU.

Removal

Customers are removed from the KU HEA for the following reasons.

- Voluntary departure.
- Default on disconnect notice payment terms.
- Failure to re-verify eligibility.

Customers are not removed from the program until their KU service is terminated or they do not re-certify.

Program Success, Challenges, and Changes

The CAC program manager stated that the challenge is that the program is fully enrolled but additional customers need assistance. The agency currently has about 1,000 customers on their waiting list.

III. Participant Interviews

APPRISE conducted in-depth telephone interviews with participants in the LG&E and KU HEA programs. These interviews assessed program outreach, participants' understanding, program impact, and satisfaction with the administering agencies and the program.

A. *Methodology*

Fifty LG&E and 50 KU HEA participants who were listed as currently enrolled in the participant databases as of October 2014 were selected for the interviews. Advance letters were mailed to the participants to inform them of the study and its purpose, provide a number for the customers to call to complete the survey at their convenience, and ask for their participation in the study.

Customers were called up to seven times over a one week period to complete the survey. Calls were made during the day, the evening and on the weekend. Two customers called APPRISE to complete the survey in response to the letter. The response to the survey was very good, exceeding the goal of 20 completes for each program. This level of response typically takes three weeks or more of calling. Most participants who did not complete the survey were not reached (voicemail or no answer) or had a non-working phone number.

B. *Findings*

This section provides a review of the findings in the following categories covered by the survey.

- Participation
- Understanding and Benefits
- Impact
- Satisfaction

Participation

Respondents were asked how they found out about the program. Table III-1 shows that participants were most likely to report that they heard about the program through the agency, followed by the utility or a friend or relative. Seven of the LG&E participants reported that they did not know how they first found out about the program because they had been in the program for several years.

Table III-1
HEA Information Source

How did you find out about the HEA Program?		
Information Source	**LG&E**	**KU**
Agency	10	16
Utility	5	1
Friend or Relative	4	3
News/Media	2	0
Apartment Staff	0	2
Don't Know	7	0

Table III-2 displays reasons why participants reported that they enrolled in the program. The most common response was to lower the energy bill. Respondents stated that their bills were high and their income was low. Some participants stated that they enrolled to receive weatherization or learn about energy efficiency.

Table III-2
HEA Enrollment Reason

Why did you decide to enroll in the HEA Program?		
Enrollment Reason	**LG&E**	**KU**
Reduce Energy Bill	21	15
Limited/Fixed Income	3	3
Program was Offered	2	7
Receive Weatherization	2	0
Learn About Energy Efficiency	1	1
Learn About Program	1	0
Avoid Shutoff	0	1

Most respondents stated that it was very easy to enroll in the HEA. Many specifically mentioned the helpfulness of the agency staff members, often stating that agency staff explained everything, were friendly, and were well organized. Only two of the LG&E HEA respondents stated that the timing or length of the required orientation session was a barrier. Five of the KU HEA respondents stated that they were required to be put on a waiting list prior to getting enrolled in the program, and two said that this was a long delay.

Table III-3
Ease or Difficulty of HEA Enrollment

How Easy or Difficult was it to Enroll in the Program?		
	LG&E	KU
Very Easy	17	15
Somewhat Easy	4	3
Somewhat Difficult	3	3
Very Difficult	1	0
Don't Know	1	0
Total	**26**	**21**

LG&E HEA respondents were asked about the helpfulness of the orientation session. Table III-4 shows that most respondents stated that it was very helpful and some stated that it was somewhat helpful. They were most likely to mention the information on energy conservation. Respondents stated "It helps with understanding what you need to do to save"; "They gave us insight on what to do to save energy, things we didn't know"; and "I learned something new." They also remarked about the clear instructions that were provided about the program.

Other positive comments included the quality of the staff, help with managing bill payments, and learning about other services.

- "They didn't make you feel like you were there for a handout, even though you are. They make you feel like they really care."
- "You learn how to manage your payments."
- "They let me know about different services and other agencies that could help."

Table III-4
Helpfulness of HEA Orientation Session

How helpful was the orientation session?	
Helpfulness	**LG&E**
Very Helpful	18
Somewhat Helpful	7
Not Too Helpful	0
Not at All Helpful	0
Don't Know	1
Total	**26**

Understanding and Benefits

Table III-5 provides participants' responses to a question asking what they needed to do to remain in the HEA program during the year. The table shows that the majority of LG&E customers stated that they needed to pay their bill or re-enroll in the program, but the KU customers were more likely to state that they did not know. Customers were not likely to report that they were required to apply for LIHEAP or accept weatherization, but the LG&E program automatically enrolls customers who apply for weatherization, so respondents may have been referred to LIHEAP when they stated that they needed to re-enroll.

Table III-5
Customer's Responsibilities to Remain in HEA

What do you need to stay in the program during the year?		
	LG&E	**KU**
Pay Bill	13	3
Re-Enroll	9	4
Apply for LIHEAP	3	1
Have Limited Income	2	0
Attend Trainings	2	0
Accept Weatherization	0	2
Call Agency	0	2
Nothing	0	1
Don't Know	1	9

When asked what they thought the benefits of the HEA were, respondents were most likely to state that it was the bill credit or lower bill, however, some mentioned weatherization, the ability to pay other bills, budget billing, and avoiding service termination. Customers remarked that energy bills were high and the program helped.

- "It helps people that have worked all of our lives because we don't get enough social security and the rent gets raised. It really helped me because I had some high bills and since I've been in the program, it's been very different."
- "It helps tremendously on electric bills, especially for people in my situation – single moms – low-income…I don't have the income for it."

With respect to being able to pay other bills and meet other needs, respondents stated the following.

- "I can buy food with the extra money or help with other needs."
- "Can use the money to pay other bills, especially medical bills."
- "I am able to do more things financially."
- "More to eat for my kids."

Others stated a general need for assistance.

- "Helping those who are really desperate – that need help."
- "Like I said, I'm disabled – I'm used to working and I had injuries in my back and neck. I draw disability. It helps a whole lot."

Table III-6
Benefits of the HEA

What do you think are the benefits of tbe HEA? What do you think is the most important benefit?				
	Benefits		Most Important Benefit	
	LG&E	KU	LG&E	KU
Bill Credit /Lower Bill	23	15	12	8
Weatherization	5	2	4	2
Assistance	3	2	4	4
Ability to Pay Other Bills	1	3	2	0
Budget Billing	1	0	0	0
Avoid Shutoff	0	2	3	4
Don't Know	0	2	1	3

Respondents were asked how much they received in their monthly credit to assess their awareness of the program. This is a more difficult question for the LG&E customers, as the credit varies by month. Most replied that the credit varied or they did not know the amount. The KU monthly credit increased to $88 in 2013, and eight of the 21 KU respondents reported this level of monthly credit.

Table III-7
Monthly Bill Credit

What is the monthly bill credit that you receive from the program?		
	LG&E	KU
$10-$15	1	0
$16	1	0
$20	3	0
$30	1	0
$33	1	0
$48	0	1
$60	1	0
$70	0	1
$80	0	2
$88	0	8
$112	1	0
$400	1	0
Varies	8	4
Don't Know	8	5

The LG&E Program includes an arrearage forgiveness component called Clean Start. When asked whether they had received forgiveness as part of this program, 13 of the 26 LG&E participants stated that they had.

Table III-8
Arrearage Forgiveness

Did you receive arrearage forgiveness from the HEA program?	
	LG&E
Yes	13
No	11
Don't Know	2
Total	**26**

Participants were asked whether the program provided referrals to other services when they applied for the HEA. Table III-9 shows that 13 of the 26 LG&E participants and five of the 21 KU participants stated that they were referred.

Table III-9
Referrals

Did the agency provide or refer you to other services when you applied for the HEA program?		
	LG&E	**KU**
Yes	13	5
No	11	15
Don't Know	2	1
Total	**26**	**21**

Table III-10 shows that the most common referral was to weatherization, followed by food banks. Most of those who were referred applied and received the services.

Table III-10
Types of Referrals

What services did the agency provide or refer you to? What services did you apply for? What services did you receive?						
	Referred To		**Applied For**		**Received**	
	LG&E	**KU**	**LG&E**	**KU**	**LG&E**	**KU**
Weatherization	10	0	9	0	9	1
Food Banks	1	3	0	1	0	2
Medical Assistance	1	0	1	0	1	0

What services did the agency provide or refer you to? What services did you apply for? What services did you receive?						
	Referred To		Applied For		Received	
	LG&E	KU	LG&E	KU	LG&E	KU
Emergency Assistance	1	0	1	0	1	0
Summer Credit	0	1	0	1	0	1
None	0	0	1	2	1	1
Don't Know	0	1	1	1	1	1

Respondents were then directly asked whether they received weatherization as a result of participating in the HEA program. Table III-11 shows that 23 of the 26 LG&E participants and 9 of the 21 KU participants reported that they received weatherization. Two of the KU respondents reported that they had turned down weatherization services, with the following comments.

- The respondent explained that she turned down weatherization services, stating "Yes, but I would not let them come…I just didn't want it."
- "I received the letter…I decided not to do it. It's not going to help – the house is too old."

Table III-11
Weatherization

Have you received Weatherization services to improve the energy use of your home as a result of participating in the HEA program?		
	LG&E	KU
Yes	23	9
No	3	12
Total	**26**	**21**

Table III-12 shows that the majority of the respondents who said they received weatherization stated that their bills were lower and their home was more comfortable. Two of the LG&E respondents did not respond to these questions because they had just received services.

Table III-12
Weatherization Benefits

How helpful was the weatherization. Do you feel your bills are lower? Do you feel your home is more comfortable?		
	LG&E	KU
Received Weatherization and Responded to Questions	21	9
Very Helpful	18	8
Bills are Lower	12	6

How helpful was the weatherization. Do you feel your bills are lower? Do you feel your home is more comfortable?		
	LG&E	KU
Home is more Comfortable	14	8

Respondents had very positive comments about the weatherization, including the following.

Services Received

- "The weatherization was wonderful. They insulated the house, adding new duct work, a new water heater, new air conditioner."
- "We had people come twice. They covered the asbestos in the basement, measured the air flow. They gave us suggestions to save energy, like keeping the furnace lower and wearing warmer clothes. They gave us the thing to clean the coils on the refrigerator."
- "They came out and checked the windows, faucets, and storm doors….It was cool because we got new aluminum-framed windows and doors." He also stated, "Our curtains would stand up in the living room because of the wind coming in and it was cold in that corner…I used to staple plastic on the frames and it would still come in. Now I don't have to do that – thank God. I'm on disability, I have COPD [Chronic Obstructive Pulmonary Disease], and I have other issues so home is where I am most of the time."

Lower Bills and Improved Comfort

- "The weatherization was very helpful. They came to seal the doors and windows. There is much less wind and draft in the house now and the bill has been lower as a result."
- "It was great! I live in a mobile home and they came and installed insulation on the roof. The bill has been much lower and the heat stays in the house better now."
- "I noticed the bill was lower right after they completed the work. My home is warmer in the winter and cooler in the summer now."
- "It's been very helpful. The bills have definitely been lower."
- "The house is more comfortable. It stays a more even temperature. The house feels tighter. You can also hear the noise from outside and the street less now with the insulation."

HEA Impact

Respondents were asked questions about their experiences prior to and while participating in the HEA to assess the impact of the program. Table III-13 displays responses to questions about the difficulty of paying their LG&E or KU bill both before and while participating in the HEA. The table shows that participants were much less likely to report that they had a very difficult time paying their LG&E or KU bill when they were participating in the program than they did prior to participating in the program.

Respondents stated that they had difficulty paying the LG&E or KU bill prior to HEA participation because they had limited income, the bill was high, or because of rising energy prices. Those who said it had been very or somewhat difficult before participating in the HEA made the following comments.

- "I had to wait for the cutoff notice each month."

- "Fixed income because I am on disability. It's especially hard in the winter, because you don't know if it's going to up really high."
- "I would not have any money left over after paying my LG&E bill."
- "Some months I couldn't pay, and then the next month would be even higher. I had it completely cut off at one time."
- "Every month, the service was almost cut off because I could barely pay the bill."
- "We couldn't pay it at all. I was going around trying to get assistance."
- "It was very hard. I would get an extension on one bill and the next month it would be twice as much."
- "I would pay monthly bills and have $5 for groceries in the winter time."
- "Usually try to pay bills on time. I pay the LG&E bill before the groceries."

Customers who stated that it was not difficult to pay their LG&E or KU bill while participating in the HEA made the following comments.

- "Much easier now to pay my bill."
- "It really has helped a lot."
- "Now I can pay with ease."
- "They've done a wonderful job."
- "It's still hard, but not completely impossible unless something unforeseen happened…that would put me in a hard spot." "It does make it easier to keep up with the electric bills…by the time spring comes…a lot of times, I can't make it every month…I have received cutoff notices in the spring time, but I haven't received those since I've been in the program."
- "When I'm on the program it makes it easier to pay other bills and have money for food."

Table III-13
LG&E/KU Bill Payment Difficulty

How difficult was/is it to make your monthly LG&E/KU payments before/while participating in the HEA program?				
Bill Payment Difficulty	**LG&E**		**KU**	
	Before	**While**	**Before**	**While**
Very Difficult	14	0	7	1
Somewhat Difficult	9	10	12	2
Not Too Difficult	2	4	1	8
Not At All Difficult	1	12	0	8
Don't Know	0	0	1	2
Total	**26**	**26**	**21**	**21**

Table III-14 displays responses to questions about the difficulty of meeting other monthly bill payment obligations both before and while participating in the HEA. The table shows that participants were much less likely to report that they had a very difficult time meeting their other needs when they were participating in the program than they were prior to participating in the program.

Respondents who stated that they had a difficult time prior to program participation made the following comments.

- "Had to juggle all the expenses on a fixed income. It was really difficult."
- "I had to cut off the home phone, had to stop the cable, and had to buy fewer groceries. When I was working it was always fine, but when I was on disability and a fixed income, everything became more difficult."
- "I was paying every bill partially because I couldn't afford it."
- "When I didn't have insurance and went to the doctor, I had to pay the bill before getting treatment."
- "We just don't have enough money…It is difficult to buy groceries and other bills."
- "When you get down to not having so much, you got priorities…Light and heat are priorities. We always had to take money from groceries or wouldn't eat meals as much as normal if we could make it. Sometimes we had garbage not picked up – that's $50 a month we can use...We do whatever it takes."

Respondents who stated that it was not difficult following enrollment made the following comments.

- "The extra money I save from the program, I can use towards paying my other bills.
- "Now, I am able to pay all my bills."
- "The program has put us on a budget and we have been able to stick to it fairly well."
- "By not having to pay the electric bill, it helps me to have more in case something comes up. This month the brakes in my car went out and I was able to buy parts to fix it."
- "My utility bill is lower and I can take that money and put it on another bill."
- "There are months when we still struggle, but it's a whole lot better than it was."

Table III-14
Other Bill Payment Difficulty

How difficult was/is it to meet your other monthly bill payment obligations before/while participating in the HEA program?				
Bill Payment Difficulty	**LG&E**		**KU**	
	Before	**While**	**Before**	**While**
Very Difficult	14	1	6	1
Somewhat Difficult	10	7	10	3
Not Too Difficult	2	11	2	13
Not At All Difficult	0	7	2	3
Don't Know	0	0	1	1
Total	**26**	**26**	**21**	**21**

Table III-15 shows that respondents were somewhat less likely to report that they went without air conditioning and much less likely to report that they went without heat after enrolling in the program.

Customers who stated that they did not use air conditioning prior to participating made the following comments about going without cooling.
- "During the summer, often had to save energy and turn it off."
- "I didn't turn it on for a whole year because I was worried about the bill."
- "Yes, I would turn it off to keep the bill down, which made it hard because I have COPD [Chronic Obstructive Pulmonary Disease] and I have cancer, but I had to."
- "Definitely because we only had window units...Sometimes you couldn't run them because it's costing you. We used to shut off a couple of rooms and stay in the bedroom."
- "We don't use A/C much because we can't afford it...It doubles our electric bill in the summer just like the heat in the winter...It gets pretty hot in the house."

Customers who stated that they went without heating prior to participating made the following comments.
- "I did keep it down. Last year, the few months I wasn't on it [the HEA program] – it was freezing so I stayed upstairs...When I got my bill for $150, I almost passed out."
- "We covered up with blankets to watch TV because it was so cold last year."

Some customers reported that they could not go without air conditioning or heating prior to participating, despite the fact that the bills were difficult.
- "I would just use it anyways and worry about my bill."
- "I've always used it. I have COPD [Chronic Obstructive Pulmonary Disease] so I pretty much have to run it [air conditioning], but I'm careful. My apartment is in a townhouse and I stay downstairs." The respondent also noted, "I use oxygen, so it would be really bad if I couldn't use it when I need it."
- "I still used the heat. I had already learned to set the temperature to under 65 degrees. I always ran it at 60 degrees no matter how cold it was. I put plastic on the inside and outside of the windows and used little space heaters to save energy."
- "Still have to use the heating, with the kids I have to use the heat."
- "Have to keep the heat and worry about the bill later."
- "I wait as late as I can to turn it on for the winter."
- "No, but I cut the heat way back and wore extra clothing."
- "I always would use it, but I would turn the thermostat way low."
- "No, I have to have heat. I can go without air [conditioning], but not without heat."

Some customers reported that they still did not use air conditioning or heating while participating in the HEA.
- "We still don't use it...We're afraid we won't be able to pay the bill." The respondent further explained that his bill goes up from $100 to $150 with air conditioning in the summer and that comes from grocery money.
- "This summer I still didn't turn it on...I'm still afraid of it."

- "I use it if I have to but if it's possible to turn it off, I always do. We have never been freezing or suffering or anything but if it's not too cold, we just put on light jackets instead."

Table III-15
Air Conditioning and Heating Use

In the year before/while participating in the HEA program, was there ever a time when you wanted to use your main source of air conditioning/heating, but did not because you would be unable to afford the electric/gas bill?								
	Air Conditioning				Heating			
Bill Payment Difficulty	LG&E		KU		LG&E		KU	
	Before	While	Before	While	Before	While	Before	While
Yes	7	4	11	7	10	1	14	4
No	19	22	10	14	16	25	7	16
Don't Know	0	0	0	0	0	0	0	1
Total	**26**	**26**	**21**	**21**	**26**	**26**	**21**	**21**

Participants were asked whether their energy usage was higher, lower, or had not changed while they participated in the program in comparison to what it was before participating. Table III-16 shows that only two of the LG&E participants said usage was higher and 10 said it was lower. The table also shows that six of the KU participants said their usage was higher and four said it was lower.

Those who said their usage was higher stated that they could afford to use more or that it was a cold winter.

- "My usage has gone up because before I couldn't use the heat unless it was very cold, but now I can use it when I need to."
- "More because you guys have helped me afford it."
- "Probably a little higher…I can make it a little warmer in the house."

Those who stated that their energy usage was lower were likely to say that it was due to weatherization or improvements they had made to the home.

- "As a result of the weatherization, the bill has been lower. It's been easier to pay the bill."
- "My sons made some improvements to the house that have helped."
- "I think it is because of the weatherization. I was skeptical before that it would really help but it really helped a lot. Now I tell people to call and get it. I tell everyone."
- "Mostly due to the weatherization."
- "The insulation has helped with that a lot."

Some noted that they worked not to increase their usage after joining the program.

- "I haven't really changed anything since I joined the program. I tried to continue saving energy and using the same amount as before."
- "I try not to use too much energy."

- "I am very meticulous about that, it has not changed…I refuse to take advantage of the program because I can't afford the bills."

Table III-16
Energy Usage

While participating in the HEA program, would you say that your energy usage was higher, lower, or has not changed in comparison to what it was before participating?		
	LG&E	**KU**
Higher	2	6
Lower	10	4
No Change	11	9
Don't Know	3	2
Total	**26**	**21**

When asked how important the HEA program had been in helping them to meet their needs, almost all respondents said that it had been very important. Respondents reported that they had money for other expenses and that it helped with the utility bill.

- "I worry about money every month. I barely buy food. It's definitely helped me eat a little bit more."
- "It helped me to pay for my other bills and put a little food in the house. Otherwise I would have no food in the winter time."
- "Knowing that I'm not going to have a great big electric bill and sometimes I do not have an electric bill. The money you save you can buy groceries with or other things that you need."
- "It has been very, very important. I am able to do more for my family. I have been able to complete repairs to my home that I was not able to do before that have helped save energy. I am now able to pay my bill on time."
- "It keeps my bills down to where I can afford to keep them paid."

Others noted that the program had been generally helpful.

- "It's been like a family member. It's that important."
- "It just makes life a lot better living when you are not scraping. It helps keep us above water and you can enjoy life when you are not always worried about getting cut off."
- "They've done a lot for me and I appreciate it."
- "I'm able to sleep better. When you can pay your bills, you can sleep better…Especially when you don't have another check coming in – I'm an old lady."

Table III-17
Importance of the HEA

How important has the HEA program been in help you to meet your needs?		
	LG&E	**KU**
Very Important	23	18
Somewhat Important	2	3
Of Little Importance	0	0
Not at All Important	0	0
Don't Know	1	0
Total	**26**	**21**

Table III-18 shows that some respondents reported that they still needed additional assistance to pay their gas and/or electric bill. Those who said they still needed help were most likely to report that they needed the additional assistance in the winter.

- "Certain months the bill is higher and it's still hard. You can't adjust the weather and sometimes it gets very cold."
- "In the winter, it is still difficult to meet monthly bill."
- "Really depends on the month and the temperature."
- "In the winter time because it is hard to make ends meet when I have a $200 to $300 bill."
- "Sometimes I do in the winter time to avoid shut off."
- "I do in the winter time… my bill can run me $400 or close to $500 per month."
- "I might in the winter – yes…Whether you use it or not, it seems that your electric bill goes up in the winter time."

Table III-18
Need for Additional Assistance

Do you feel that you need additional assistance to pay your electric and/or gas bill?		
	LG&E	**KU**
Yes	10	8
No	15	11
Don't Know	1	1
Refused	0	1
Total	**26**	**21**

Satisfaction

Participants were asked about their satisfaction with the agency and with the program. Table III-19 shows that most respondents stated that they were very satisfied with the agency. Respondents reported that staff at the agency were helpful and respectful.

Agency Staff Were Helpful

- "The staff was very friendly and professional."
- "They did everything they could to help me. There were so many people there but they did so well handling it. The wait wasn't bad at all. It was very efficient, as long as you had all your stuff. I can't sit too long so I had to get up and walk around but they were very good about managing everyone."
- "The people were very nice and helped me apply"
- "The people were very helpful. They got you in and got you out. Did a great job."
- "A caseworker came to the house to check up on us and make sure we were getting all the services we needed."
- "They've got a wonderful person working there…willing to help you in any way that she can…She goes above the call of duty and makes it easier to apply. It makes a big difference when you have someone you can work with."

Agency Staff Explained Everything

- "The efficiency of the whole process and how thorough the explanation was. I had no questions afterwards about how the program worked."
- "I'm limited in education, but they made everything simple and showed me so many options…They couldn't have made it any easier unless they did it all and sent me a letter home…All I provided was the body and a signature."
- "She was very kind and explained everything to me so I would understand it."
- "She explained everything and tries to help you as much as she can."
- "They're very helpful. When you go in, you know what you need and I try to have everything I need with me. They're so friendly and break it down and explain everything to me…When you don't have something you need, they're nice about it."
- "They were nice and everything and explained it to me – what the program is about."

Agency Staff Were Respectful

- "They always really do what they can to help you and they treat you respectfully…they don't look down on you. I've not been used to receiving a whole lot of assistance until the past 5 years and it means a lot to me."
- "They worked really good with me. A lot of times when you try to get help, they try to make you feel hurt…I was treated right and with respect."
- "They're nice people who run Community Action…Other places look down at you and say what did you do with all your money? Like you had a lot or something. They can be rude."
- "They were so nice. It's hard to go and ask for help and they made me feel comfortable."

Table III-19
Satisfaction with Agency Where Participant Applied

How satisfied were you with the agency that you worked with to apply for the HEA program?		
	LG&E	KU
Very Satisfied	22	18
Somewhat Satisfied	2	2
Somewhat Dissatisfied	0	0
Very Dissatisfied	1	1
Don't Know	1	0
Total	**26**	**21**

Table III-20 shows that all of the LG&E HEA participants and 17 of the 21 KU participants reported that they were very satisfied with the program. They commented about how the program had helped them.

- "Very appreciative. It helps tremendously – single mom trying to get her kids through school…I live off of disability so I don't have much money…it frees up extra dollars for food in other words."
- "I can meet all my needs and I can get my food. It really helped me in the winter time."
- "Every little bit helps and what I've gotten from them has helped me tremendously…I hope the program continues myself."
- "Because they care and it helps."
- "Anyone who says anything otherwise is crazy. When someone is helping you out, you have to be thankful."
- "The process is complicated, once enrolled, it is very easy. At a certain age, it is hard to apply."
- "It would be a whole different situation for us without it. I don't know what I would do without it."
- "I love the program. I thank God for this program. I hope it continues and that more people get the opportunity to participate."

Table III-20
Satisfaction with the HEA Program

How satisfied are you with the HEA program?		
	LG&E	KU
Very Satisfied	26	17
Somewhat Satisfied	0	3
Somewhat Dissatisfied	0	0
Very Dissatisfied	0	1

How satisfied are you with the HEA program?		
	LG&E	KU
Total	26	21

Participants had some recommendations for the program focused on continuing the program, accessibility, prioritizing based on need, and providing more information on deadlines and time prior to removal. Many stated that they were happy with the program as it was.

- "I think everybody is doing a great job."
- "Keep on going the way you are. It's like having a ton of bricks taken off you. It's a God send, really."
- "I don't know what else they could do. They are doing a great job."
- "They just need to keep on doing what they are doing. They [Community Action] made me feel like a real person."
- "No, sir, I think it is a great program. I wouldn't know what to change."
- "What am I supposed to say to that? I've just been happy with the way they helped me…I just go on trying to pay my bills and they've helped a lot."
- "No, I can't think of anything that would improve it really. If you need help, they're there to help you."
- "No, I think it's wonderful the way it is."

C. Summary and Recommendations

This section provides a summary of the findings from the participant interviews. The research found that the LG&E participants had a better understanding of the program and were more likely to report that they received referrals and participated in weatherization. However, the program had a positive impact on participants in both the LG&E and KU HEA programs and respondents provided very positive comments about the assistance received and the agency staff that enrolled them.

- Participation
  - Ease of Enrollment – Most participants stated that it was very easy to enroll in the HEA and said that agency staff explained everything, were friendly, and were well organized. Only a few of the LG&E participants said that the required orientation session was a barrier, but about one quarter of the KU participants said that they were put on a waiting list and had a long delay prior to enrollment.
  - LG&E Orientation Session – Most LG&E participants said the session was very or somewhat helpful. They were most likely to mention the information on energy conservation. They also remarked about the clear instructions that were provided about the program.

- Understanding and Benefits
    - Customer Responsibilities – Most LG&E participants stated that they needed to pay their bill or re-enroll to remain in the HEA, but almost half of the KU participants did not know what the requirements were.
    - Program Benefits – When asked what they thought the benefits of the HEA were, respondents were most likely to state that it was the bill credit or lower bill, however, some mentioned weatherization, the ability to pay other bills, budget billing, and avoiding service termination.
    - Referrals – Thirteen of the 26 LG&E participants and five of the 21 KU participants stated that they were referred to other programs or services when they applied for the HEA. They were most likely to report that the service they were referred to was weatherization, but they also were referred for food and medical assistance.
    - Weatherization – When asked specifically about weatherization, 23 of the 26 LG&E participants and 9 of the 21 KU participants reported that they received weatherization. The majority of those who received weatherization stated that their bills were lower and their home was more comfortable.
- Impact
    - Utility Bill Payment – Participants were much less likely to report that they had a very difficult time paying their LG&E or KU bill when they were participating in the program than they did prior to participating in the program.
    - Meeting Other Needs – Participants were much less likely to report that they had a difficult time meeting their other needs when they were participating in the program than they did prior to participating in the program.
    - Importance of the HEA – When asked how important the HEA program had been in helping them to meet their needs, almost all respondents said that it had been very important.
- Satisfaction
    - Satisfaction with the Agency – Most respondents said that they were very satisfied with the agency. Respondents reported that the staff at the agency were helpful and respectful.
    - Satisfaction with the HEA Program – All of the LG&E HEA participants and 17 of the 21 KU participants reported that they were very satisfied with the program.

IV. Program Statistics

This section provides an analysis of participation and benefits based on data in program tracking databases and in LG&E and KU's Customer Information System.

A. Participation

Table IV-1 displays the number of customers who received at least one HEA benefit payment each year from 2010 through 2014 (through September). The table shows that the number of LG&E participants has increased and the number of KU participants has declined due to a stabilization in participation with less turnover in the program. While funding has increased, LG&E benefits remained constant and KU benefits doubled.

Table IV-1
Number of HEA Participants
By Year and Utility, 2010-2014

Year	LG&E	KU
2010	1,513	4,043
2011	1,977	3,802
2012	2,475	3,597
2013	2,515	3,511
2014	2,846	3,278

Table IV-2 displays the number of participants by first year of participation, to show the total number of participants over the nearly five year period. LG&E had 5,648 participants and KU had 7,508 participants. The table shows that 2010 has the greatest number, because participants who had received their first benefit prior to 2010 would be included in this row in the table.

Table IV-2
HEA Participants from 2010-2014
By First Year of Participation

Year	LG&E	KU
2010	1,513	4,043
2011	1,018	1,177
2012	1,211	892
2013	904	829
2014	1,002	567
TOTAL	**5,648**	**7,508**

Table IV-3 displays the number of years that participants received benefit payments from 2010 through 2014. The table shows that 51 percent of LG&E participants and 34 percent of KU participants received benefits for only one of the five years. LG&E participants would be more likely to only receive benefits in one calendar year as they would need to re-apply for LIHEAP and re-qualify for the HEA to receive benefits in a second calendar year. The KU HEA program is for one year from the enrollment, and therefore, participants are more likely to receive benefits in more than one calendar year. LG&E participants may also be less likely to receive benefits in as many years, as they are removed from the HEA after a payment is missed and not made up within four weeks. KU participants are only removed from the HEA when their service is disconnected. The table shows that eight percent of LG&E and 15 percent of KU participants received benefits in all five years.

Table IV-3
Number of Years of HEA Benefit Payments
2010-2014 Participants

Years	LG&E		KU	
	Number	Percent	Number	Percent
1	2,858	51%	2,530	34%
2	1,213	21%	2,161	29%
3	696	12%	1,005	13%
4	451	8%	696	9%
5	430	8%	1,116	15%
TOTAL	**5,648**	**100%**	**7,508**	**100%**

Table IV-4 displays the number of months that HEA participants received benefit payments. The table shows that about half of the KU participants received benefits from one to seven months, which would be the equivalent of one program year or less, as the KU payments are made seven months of the year. The table shows that about half of the LG&E participants also received benefits in one program year or less, with one to twelve benefit payments.

LG&E benefits are shown as the number of deposits to the customer's account and the number of months that the benefits cover for two reasons. First, customers who are enrolled in the LG&E HEA after January, receive a benefit to make up for the months missed in the first month of benefits. For example, a customer who receives the first benefit in March, will receive benefits for January, February, and March in the first benefit payment. This would be listed as one payment in the "Separate Benefit Payments" column and as three payments in the "Months Covered" column. The other reason that the LG&E customers receive more than one month of benefit at a time is if they miss a payment and make it up prior to being removed from the program.

Table IV-4
Number of Months of HEA Benefit Payments
2010-2014 Participants

LG&E					KU		
Months	Separate Benefit Payments		Months Covered		Months	Number	Percent
	Number	Percent	Number	Percent			
1-12	3,171	56%	2,890	51%	1-7	3,635	48%
13-24	1,106	20%	1,217	22%	8-14	1,536	20%
25-36	631	11%	699	12%	15-21	897	12%
37-48	376	7%	416	7%	22-28	565	8%
49-60	364	6%	426	8%	29-35	875	12%
TOTAL	**5,648**	**100%**	**5,648**	**100%**	**TOTAL**	**7,508**	**100%**

Table IV-5 displays the percent of customers who received all benefit payments for the year from the time that they enrolled. The table shows that approximately 75 percent of the LG&E participants received all monthly benefits in all four years examined. The percentage of KU participants that received all benefits from the time they enrolled until the end of the year increased from 61 percent in 2010 to 73 percent in 2013.

Table IV-5
Percent of Customers Receiving All Benefit Payments for the Year
From the Time of Enrollment

Year	LG&E	KU
2010	76%	61%
2011	73%	66%
2012	72%	71%
2013	77%	73%

Table IV-6 displays the number of separate participation events. The table shows that most of the participants only participated once from 2010 to 2014. LG&E customers who receive benefits and then skip a few months and receive make-up benefits when missed payments are made are counted as one participation, as they did not exit the program.

Table IV-6
Number of Separate Program Participation Events
2010-2014

Years	LG&E		KU	
	Number	Percent	Number	Percent
1	5,177	92%	6,535	87%
2	464	8%	859	11%
3	7	<1%	99	1%
4	0	0%	15	<1%
TOTAL	**5,648**	**100%**	**7,508**	**100%**

LG&E/KU reported that 92 percent of LG&E customers reside in Jefferson County where AEC is located, and 28 percent of KU customers reside in Fayette County where CAC is located. Table IV-7 shows that the percent of LG&E participants in Jefferson County approximately matches the percent of LG&E customers, but that the percent of KU participants in Fayette County, 39 percent, is higher than the 28 percent that would represent the distribution of customers. KU should make an effort to distribute additional participation to other counties. The utilities should compare their customer distributions to the participation distribution by county to determine if additional counties are underrepresented.

Table IV-7
County Level Participation
2010-2014

Year	LG&E Percent of Participants in Jefferson County	KU Percent of Participants in Fayette County
2011	92%	39%
2012	94%	39%
2013	95%	38%

B. Customer Characteristics

This section examines the characteristics of the customers who participated in the LG&E and KU HEA programs based on the data in the program databases. A large percentage of the LG&E customers are missing these data.

Table IV-8 shows that seventeen to twenty-five percent of LG&E participants do not have income data available in the program database. Therefore, percentages are shown both including and excluding the missing accounts. The KU participants, by comparison, almost always have income data available. The table shows that 50 to 60 percent of the participants have annual household income below $10,000 and almost all have income below $30,000.

Table IV-8
Annual Household Income for HEA Participants
2010-2014

LG&E												
Annual Income	**2010**			**2011**			**2012**			**2013**		
	#	**Percent**		**#**	**Percent**		**#**	**Percent**		**#**	**Percent**	
		All	**With Data**		**All**	**With Data**		**All**	**With Data**		**All**	**With Data**
≤$10,000	710	47%	57%	811	41%	53%	949	38%	51%	979	39%	49%
$10,001-$20,000	478	32%	38%	605	31%	40%	745	30%	40%	839	33%	42%
$20,001-$30,000	63	4%	5%	88	4%	6%	137	6%	7%	148	6%	7%
>$30,000	5	<1%	<1%	12	1%	1%	17	1%	1%	19	1%	1%
Missing	257	17%	--	461	23%	--	627	25%	--	530	21%	--
TOTAL	**1,513**	**100%**		**1,977**	**100%**		**2,475**	**100%**		**2,515**	**100%**	
Mean Income	**$10,591**			**$11,002**			**$11,334**			**$11,617**		

KU								
Annual Income	**2010**		**2011**		**2012**		**2013**	
	#	**Percent**	**#**	**Percent**	**#**	**Percent**	**#**	**Percent**
≤$10,000	2,474	61%	2,262	60%	2,089	58%	2,048	58%
$10,001-$20,000	1,296	32%	1,278	34%	1,283	36%	1,260	36%
$20,001-$30,000	214	5%	210	6%	178	5%	166	5%
>$30,000	51	1%	50	1%	44	1%	36	1%
Missing	8	<1%	2	<1%	3	<1%	1	<1%
TOTAL	**4,043**	**100%**	**3,802**	**100%**	**3,597**	**100%**	**3,511**	**100%**
Mean Income	**$9,510**		**$9,826**		**$9,938**		**$9,914**	

Table IV-9 displays the primary income source. About half of the LG&E participants have Social Security or a Pension as the primary source of income, followed by SSI and then wages. By comparison, about one third of the KU participants have Social Security or a Pension as the primary source of income. LG&E participants are required to have at least $100 per month income to be eligible for the program, so there are virtually no LG&E participants with no income. However, the table shows that the percent of KU participants with no income ranges from 11 percent to 14 percent.

Table IV-9
Primary Income Source
HEA Participants
2010-2014

LG&E												
Income Source	**2010**			**2011**			**2012**			**2013**		
	#	**Percent**		**#**	**Percent**		**#**	**Percent**		**#**	**Percent**	
		All	**With Data**		**All**	**With Data**		**All**	**With Data**		**All**	**With Data**
Social Security/Pension	579	38%	46%	772	39%	51%	932	38%	50%	1,043	41%	53%
SSI	307	20%	24%	313	16%	21%	370	15%	20%	379	15%	19%
Wages	247	16%	20%	273	14%	18%	363	15%	20%	394	16%	20%
Unemployment	46	3%	4%	59	3%	4%	58	2%	3%	43	2%	2%
Child Support	35	2%	3%	36	2%	2%	57	2%	3%	48	2%	2%
K-TAP/TANF	18	1%	1%	26	1%	2%	26	1%	1%	20	1%	1%
No Income	2	<1%	<1%	1	<1%	<1%	3	<1%	<1%	4	<1%	<1%
Other	22	1%	2%	36	2%	2%	39	2%	2%	54	2%	3%
Missing	257	17%	--	461	23%	--	627	25%	--	530	21%	--
TOTAL	**1,513**	**100%**		**1,977**	**100%**		**2,475**	**100%**		**2,515**	**100%**	

KU								
Income Source	**2010**		**2011**		**2012**		**2013**	
	#	**Percent**	**#**	**Percent**	**#**	**Percent**	**#**	**Percent**
Social Security/Pension	1,309	32%	1,313	35%	1,273	35%	1,275	36%
SSI/SSDI/SSA-RSDI	950	24%	956	25%	931	26%	945	27%
Wages	859	21%	736	19%	679	19%	652	19%
Child Support	125	3%	111	3%	104	3%	86	2%
Unemployment	85	2%	67	2%	52	1%	40	1%
K-TAP/TANF	60	1%	58	2%	59	2%	48	1%
No Income	568	14%	472	12%	426	12%	398	11%
Other	73	2%	83	2%	67	2%	61	2%
Missing	14	<1%	6	<1%	6	<1%	6	<1%
TOTAL	**4,043**	**100%**	**3,802**	**100%**	**3,597**	**100%**	**3,511**	**100%**

Table IV-10 displays the poverty level for the HEA participants. The tables show that about 60 to 65 percent of LG&E participants have income between 51 and 100 percent of the poverty level, greater than the 50 to 55 percent for KU customers. KU participants are more likely to have income below 50 percent of the poverty level than the LG&E participants.

Table IV-10
Poverty Level for HEA Participants
2010-2014

LG&E												
Poverty Level	**2010**			**2011**			**2012**			**2013**		
	#	**Percent**		**#**	**Percent**		**#**	**Percent**		**#**	**Percent**	
		All	**With Data**		**All**	**With Data**		**All**	**With Data**		**All**	**With Data**
≤50%	308	20%	25%	345	17%	23%	419	17%	23%	404	16%	20%
51%-100%	782	52%	62%	922	47%	61%	1,141	46%	62%	1,281	51%	65%
101%-130%	166	11%	13%	249	13%	16%	288	12%	16%	300	12%	15%
Missing	257	17%	--	461	23%	--	627	25%	--	530	21%	--
TOTAL	**1,513**	100%		**1,977**	100%		**2,475**	100%		**2,515**	100%	
Mean Poverty Level	70%			72%			72%			72%		

KU								
Poverty Level	**2010**		**2011**		**2012**		**2013**	
	#	**Percent**	**#**	**Percent**	**#**	**Percent**	**#**	**Percent**
≤50%	1,283	32%	1,096	29%	993	28%	976	28%
51%-100%	2,004	50%	1,921	51%	1,888	52%	1,925	55%
101%-130%	748	19%	783	21%	713	20%	609	17%
Missing	8	<1%	2	<1%	3	<1%	1	<1%
TOTAL	**4,043**	**100%**	**3,802**	**100%**	**3,597**	**100%**	**3,511**	**100%**
Mean Poverty Level	65%		68%		68%		67%	

Table IV-11 displays home ownership data for LG&E and KU HEA participants. The table shows that more than 50 percent of LG&E HEA participants are homeowners, compared to about 30 percent of KU HEA participants. LG&E HEA participants are not eligible if they live in subsidized housing, but about 35 percent of KU HEA participants live in subsidized or public housing.

Table IV-11
Home Ownership
HEA Participants
2010-2014

LG&E												
Home Ownership	**2010**			**2011**			**2012**			**2013**		
	#	**Percent**		#	**Percent**		#	**Percent**		#	**Percent**	
		All	**With Data**		**All**	**With Data**		**All**	**With Data**		**All**	**With Data**
Own	726	48%	58%	835	42%	55%	942	38%	51%	1,017	40%	51%
Rent	521	34%	42%	667	34%	44%	895	36%	48%	960	38%	48%
Other	8	1%	1%	14	1%	1%	11	<1%	1%	8	<1%	<1%
Missing	258	17%	--	461	23%	--	627	25%	--	530	21%	--
TOTAL	**1,513**	**100%**		**1,977**	**100%**		**2,475**	**100%**		**2,515**	**100%**	

KU								
Home Ownership	**2010**		**2011**		**2012**		**2013**	
	#	**Percent**	**#**	**Percent**	**#**	**Percent**	**#**	**Percent**
Own	1,185	29%	1,182	31%	1,128	31%	1,098	31%
Rent	1,411	35%	1,265	33%	1,158	32%	1,117	32%
Subsidized Housing	1,279	32%	1,202	32%	1,175	33%	1,161	33%
Public Housing	118	3%	129	3%	131	4%	132	4%
Other	4	<1%	4	<1%	1	<1%	1	<1%
Missing	46	1%	20	1%	4	<1%	2	<1%
TOTAL	**4,043**	**100%**	**3,802**	**100%**	**3,597**	**100%**	**3,511**	**100%**

Table IV-12 displays data on the presence of elderly household members and children for the KU HEA program. The LG&E HEA program did not have these data available. The table shows that about 30 percent of the KU HEA participants had an elderly household member and about 40 percent had a child. Over 65 percent had at least one of these vulnerable groups in the home.

Table IV-12
Vulnerable Household Members
HEA Participants
2010-2014

KU								
Vulnerable Member	**2010**		**2011**		**2012**		**2013**	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Elderly	1,083	27%	1,130	30%	1,132	31%	1,090	31%
Child	1,721	43%	1,489	39%	1,375	38%	1,280	36%
Either	2,742	68%	2,552	67%	2,441	68%	2,308	66%

C. Benefits

This section examines the annual amount of benefits received by the HEA participants. Table IV-13 shows that the mean 2013 HEA benefit was $641 for LG&E and $391 for KU.

Table IV-13
Mean HEA Benefit
2010-2014

Annual HEA Benefit	**2010**		**2011**		**2012**		**2013**	
	LG&E	**KU**	**LG&E**	**KU**	**LG&E**	**KU**	**LG&E**	**KU**
Mean	$593	$185	$564	$211	$618	$223	$641	$391

Table IV-14 displays the mean LG&E HEA benefits by poverty level (KU benefits are not shown by poverty level because they are designed to be the same for all participants.) The table shows that the LG&E program does a good job of targeting higher benefits to the lower poverty level participants. While those with income below 50 percent of the poverty level have mean benefits of $798 in 2013, those from 51 to 100 percent have mean benefits of $628, and those with income from 100 to 130 percent have mean benefits of $499.

Table IV-14
Mean LG&E HEA Benefit
By Poverty Level
2010-2014

LG&E								
Income	2010		2011		2012		2013	
	Number	Mean Benefit	Number	Mean Benefit	Number	Mean Benefit	Number	Mean Benefit
≤50%	229	$739	216	$757	262	$770	287	$798
51%-100%	585	$537	597	$527	754	$611	943	$628
101%-130%	110	$435	138	$419	159	$467	206	$499
Missing	589	$622	1,026	$565	1,300	$610	1,079	$637
TOTAL	**1,513**	**$593**	**1,977**	**$564**	**2,475**	**$618**	**2,515**	**$641**

Table IV-15 displays the distribution of HEA benefits. The table shows that most of the LG&E HEA participants, 75 percent, have benefits at one of the annual levels of $200, $400, $700, or $1,000 (shaded). Between 34 and 51 percent of the KU HEA participants received the maximum available benefit each year by receiving benefits in all seven benefit months.

Table IV-15
Annual HEA Benefits
HEA Participants
2010-2014

LG&E								
Annual HEA Benefit	2010		2011		2012		2013	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<$200	79	5%	330	17%	108	4%	73	3%
$200	179	12%	44	2%	173	7%	245	10%
$201-$399	128	8%	302	15%	286	12%	166	7%
$400	293	19%	105	5%	332	13%	463	18%
$401-$699	143	9%	419	21%	351	14%	233	9%
$700	235	16%	125	6%	361	15%	438	17%
$701-$999	69	5%	272	14%	213	9%	104	4%
$1,000	339	22%	261	13%	486	20%	757	30%
>$1,000	48	3%	119	6%	165	7%	36	1%
TOTAL	**1,513**	**100%**	**1,977**	**100%**	**2,475**	**100%**	**2,515**	**100%**

KU								
Annual HEA Benefit	2010		2011		2012		2013	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<$200	2,198	54%	1,704	45%	1,517	42%	860	24%
$200-$295	476	12%	498	13%	350	10%	174	5%
$296	1,369	34%	0	0%	0	0%	0	0%
$297-$307	0	0%	0	0%	0	0%	0	0%
$308	0	0%	1,600	42%	1,730	48%	2	<1%
$309-$527	0	0%	0	0%	0	0%	685	20%
$528	0	0%	0	0%	0	0%	1,790	51%
TOTAL	**4,043**	**100%**	**3,802**	**100%**	**3,597**	**100%**	**3,511**	**100%**

V. Program Impacts

This section provides an analysis of the impacts of the HEA assistance on affordability, bill payment, LIHEAP assistance, and late payment notices ("brown bills") and service terminations. The analysis is based upon data in the program databases and LG&E and KU billing, paying, and collections data.

A. Methodology

This section describes the selection of participants for the evaluation, the evaluation data used in the analysis, and the use of comparison groups.

Evaluation Data
LG&E and KU provided customer data, program data, billing and payment data, and collections data for all customers who participated in the HEA program between 2010 and 2014.

Treatment Groups
Customers who enrolled in the HEA program between January 1, 2011 and December 31, 2012 were included as potential members of the study group. This group was chosen for the analysis, as one full year of pre-program and post-program data is required for an analysis of program impacts.

Comparison Groups
When measuring the impact of an intervention, it is necessary to recognize other exogenous factors that can impact changes in outcomes. Changes in the payment behavior and bill coverage rates of customers, between the year preceding HEA enrollment and the year following enrollment, may be affected by many factors other than services received through the program. These exogenous factors may include changes in household composition or health of family members, changes in electric and gas prices, changes in weather, and changes in the economy.

In the absence of randomly assigned treatment and control groups, comparison groups were constructed to control for exogenous factors. The comparison groups were designed to be as similar as possible to the treatment groups, those who received services and who we are evaluating, so that the exogenous changes for the comparison groups are as similar as possible to those of the treatment groups.

The comparison group was comprised of customers who enrolled in HEA in 2012 and 2013 and who did not receive HEA benefits in the two years preceding enrollment. We required that they had no discounted bills in the two years preceding enrollment to ensure that they were nonparticipants in both periods. These participants serve as a good comparison because they are also low income households who were eligible for the program and chose to participate. We use data for these participants for the two years preceding HEA enrollment, to compare changes in their payment behavior in the years prior to enrolling to the treatment group's changes in payment behavior after enrolling. Because these customers did not participate in the HEA program in either of the two analysis years, changes in bills and payment behavior should be related to factors that are exogenous to the program.

For the program impact analysis, we examined pre- and post-treatment statistics. The difference between the pre- and post-treatment statistics for the treatment group is considered the gross change. This is the actual change in behaviors and outcomes for those participants who were served by the program. Some of these changes may be due to the HEA program, and some of these changes are due to other exogenous factors, but this represents the customer's actual experience. The net change is the difference between the change for the treatment group and the change for the comparison group, and represents the actual impact of the program, controlling for other exogenous factors.

Customers who participated in HEA in the year prior to enrollment were excluded from the analysis, to allow for a comparison of data while not participating and while participating in HEA. Customers who did not have a full year of data prior to the first benefit date or a full year of data following the first benefit date were not included in the impact analysis. The subject of data attrition is addressed more fully in the next section.

Tables V-1A and V-1B describe the treatment and comparison groups that are included in the analyses in this section. They are structured somewhat differently for LG&E and KU because of the difference in the way the programs are designed. The LG&E analysis period is calendar year 2011 or 2012 because the benefits are structured for the year. The KU analysis period is one year from the first benefit, as these benefits begin at the time of enrollment and run for one year until re-certification is required.

Table V-1A
LG&E Treatment and Comparison Groups

	2011 Treatment Group	2011 Comparison Group	2012 Treatment Group	2012 Comparison Group
HEA Benefit Requirement	Received in 2011	Received in 2012	Received in 2012	Received in 2013
HEA Participation Requirement	No 2010 benefit	No 2009 or 2010 benefit	No 2011 benefit	No 2011 or 2012 benefit
Pre-participation Period	Calendar year 2010	Calendar year 2010	Calendar year 2011	Calendar year 2011
Post-participation Period	Calendar year 2011	Calendar year 2011	Calendar year 2012	Calendar year 2012

Table V-1B
KU Treatment and Comparison Groups

	2011 Treatment Group	2011 Comparison Group	2012 Treatment Group	2012 Comparison Group
HEA Benefit Requirement	Received in 2011	Received in 2012	Received in 2012	Received in 2013
HEA Participation Requirement	No HEA benefit in the year prior to the first benefit	No HEA benefit two years prior to the first benefit	No HEA benefit in the year prior to the first benefit	No HEA benefit two years prior to the first benefit
Pre-participation Date	1 year prior to the first benefit	2 year prior to the first benefit	1 year prior to the first benefit	2 year prior to the first benefit
Post-participation Date	1 year after the first benefit	1 year prior to the first benefit	1 year after the first benefit	1 year prior to the first benefit

B. Data Attrition

Customers were excluded from the analyses if they did not have adequate pre or post data available. They were required to have at least 330 days of data available in both the pre- and post-enrollment periods to be included. Customers with enough data are designated as the "Final Analysis Group." Tables V-2A and V-2B display the number of customers that were excluded from the LG&E and KU analysis groups because they did not have enough data. The table shows that 39 to 58 percent of each group was included in the analysis.

Table V-2A
LG&E Attrition Analysis

	2011 Treatment		2011 Comparison		2012 Treatment		2012 Comparison	
	#	%	#	%	#	%	#	%
Eligible	1,018	100%	1,211	100%	1,297	100%	935	100%
Enough pre days	680	67%	513	42%	791	61%	420	45%
Enough post days	816	80%	711	59%	929	72%	521	56%
Enough days in both periods	593	58%	493	41%	663	51%	399	43%

Table V-2B
KU Attrition Analysis

	2011 Treatment		2011 Comparison		2012 Treatment		2012 Comparison	
	#	%	#	%	#	%	#	%
Eligible	1,181	100%	861	100%	977	100%	845	100%
Enough pre days	768	65%	338	39%	711	73%	454	54%
Enough post days	844	71%	618	72%	719	74%	673	80%
Enough days in both periods	616	52%	337	39%	566	58%	453	54%

C. *Participant Characteristics*

Table V-3A displays the characteristics of the 2011 and 2012 treatment and comparison groups for LG&E HEA customers. We compare the original eligible customers to the Analysis Group of those with enough data to be included in the evaluation to assess whether there is a possibility of bias due to the elimination of about half of the eligible sample.

In general, the "All" groups were very similar to the Analysis Groups, providing some level of confidence that the impacts estimated are attributable to the full population of program participants. The notable differences were as follows.

- Missing Data – The All groups were more likely to have missing data than the Analysis Groups.
- Own Home – The Analysis Groups were more likely to own their homes than the All groups.

Table V-3A
LG&E Participant Characteristics

	2011 Treatment		2011 Comparison		2012 Treatment		2012 Comparison	
	All	Analysis Group	All	Analysis Group	All	Analysis Group	All	Analysis Group
Observations	1,018	593	1,211	493	1,297	663	935	399
Annual Income								
≤$10,000	28%	32%	23%	26%	24%	30%	22%	27%
$10,001-$20,000	23%	28%	21%	29%	21%	30%	21%	27%
$20,001-$30,000	4%	4%	5%	7%	6%	7%	4%	4%
>30,000	1%	1%	1%	1%	1%	<1%	<1%	1%
Missing	45%	35%	50%	37%	48%	33%	53%	41%
Poverty Group								
≤50%	11%	12%	11%	12%	12%	13%	9%	9%
51%-100%	33%	40%	29%	36%	30%	40%	30%	38%
101%-130%	11%	13%	10%	14%	10%	14%	9%	12%
Missing	45%	35%	50%	37%	48%	33%	53%	41%
Home Ownership								
Own	24%	33%	23%	37%	23%	36%	21%	36%
Rent	30%	31%	27%	26%	28%	30%	26%	23%
Other	<1%	1%	<1%	<1%	<1%	<1%	<1%	<1%
Missing	45%	35%	50%	37%	48%	33%	53%	41%
Mean Income	$11,450	$11,579	$12,157	$12,271	$12,043	$12,097	$12,083	$11,966
Mean Poverty Level	74%	76%	74%	77%	74%	75%	74%	77%

Table V-3B displays the characteristics of the 2011 and 2012 treatment and comparison groups for KU HEA customers. Again, in general, the All groups were very similar to Analysis Group except the Analysis Groups were more likely to own their homes than the All groups.

Table V-3B
KU Participant Characteristics

	2011 Treatment		2011 Comparison		2012 Treatment		2012 Comparison	
	All	Analysis Group	All	Analysis Group	All	Analysis Group	All	Analysis Group
Observations	1,181	616	861	337	977	566	845	453
Annual Income								
≤$10,000	61%	56%	59%	59%	60%	59%	61%	55%
$10,001-$20,000	31%	35%	36%	34%	35%	36%	32%	38%
$20,001-$30,000	6%	7%	4%	6%	4%	4%	6%	6%
>30,000	2%	2%	1%	1%	1%	1%	1%	1%
Missing	<1%	<1%	<1%	0%	<1%	0%	<1%	0%
Poverty Group								
≤50%	37%	31%	38%	34%	38%	36%	39%	32%
51%-100%	43%	46%	44%	46%	45%	44%	47%	50%
101%-130%	20%	24%	18%	20%	17%	20%	15%	18%
Missing	<1%	<1%	<1%	0%	<1%	0%	<1%	0%
Home Ownership								
Own	21%	34%	20%	32%	19%	26%	20%	30%
Rent	44%	31%	44%	32%	43%	32%	43%	38%
Other	34%	35%	36%	36%	38%	41%	37%	32%
Missing	<1%	<1%	<1%	0%	<1%	0%	<1%	0%
Vulnerable Member								
Elderly	20%	27%	18%	24%	18%	22%	18%	24%
Child	47%	43%	50%	42%	51%	48%	46%	41%
Either	65%	68%	67%	65%	67%	69%	63%	64%
Mean Income	$9,444	$10,385	$9,291	$9,937	$9,174	$9,521	$9,125	$9,986
Mean Poverty Level	62%	69%	60%	65%	59%	62%	58%	65%

D. Affordability

This section of the report assesses the impact of the HEA program on the affordability of electric and gas bills for LG&E program participants and electric bills for KU program participants.

Table V-4A displays the affordability impacts for LG&E's HEA. The treatment and comparison groups had similar full bill amounts and energy burden in the pre-period. Both the 2011 and 2012 groups had a pre-participation energy burden of approximately 20 percent. However, the treatment group had much lower discounted bills and energy burden in the post-period as a result of receiving the HEA credit. The table shows that the treatment group received an average HEA benefit of $649 in 2011 and $689 in 2012, resulting in a net decline in energy burden of eight percentage points.

Table V-4A
LG&E Energy Burden Impacts

2011 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	385[1]			309[2]			
Full Bill	$1,831	$1,885	$54**	$1,894	$2,002	$108**	-$54**
Discount	$0	$649	$649**	$0	$0	$0	$649**
Discounted Bill	$1,831	$1,236	-$595**	$1,894	$2,002	$108**	-$702**
Energy Burden	20%	13%	-7%**	20%	21%	1%**	-8%**

2012 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	443[3]			234[4]			
Full Bill	$2,021	$1,892	-$130**	$1,930	$1,854	-$76**	-$54**
Discount	$0	$689	$689**	$0	$0	$0	$689**
Discounted Bill	$2,021	$1,202	-$819**	$1,930	$1,854	-$76**	-$743**
Energy Burden	21%	12%	-9%**	19%	19%	-1%**	-8%**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.
[1] 208 customers didn't have income data and were excluded from this analysis. [2] 184 customers didn't have income data and were excluded from this analysis. [3] 220 customers didn't have income information and were excluded from this analysis. [4] 165 customers didn't have income information and were excluded from this analysis.

Table V-4B displays the affordability impacts for KU's HEA. The treatment group and the comparison group had similar bills and energy burden in the pre-period, but the treatment group had discounted bills and a reduced energy burden in the post-period as a result of the HEA credit. The table shows that the treatment group received an average HEA benefit of $267 in 2011 and $349 in 2012. This benefit reduced the mean energy burden from 26 percent to 23 percent in 2011 and from 30 to 28 percent in 2012. The net change was a decline of three percentage points in 2011 and four percentage points in 2012.

Table V-4B
KU Energy Burden Impacts

2011 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	615[1]			337			
Full Bill	$1,392	$1,260	-$132**	$1,309	$1,215	-$93**	-$38*
Discount	$0	$267	$267**	$0	$0	$0	$267**
Discounted Bill	$1,392	$993	-$399**	$1,309	$1,215	-$93**	-$305**
Energy Burden	26%	23%	-4%**	28%	27%	-1%**	-3%**

2012 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	566			453			
Full Bill	$1,245	$1,394	$149**	$1,286	$1,429	$143**	$6
Discount	$0	$349	$349**	$0	$0	$0	$349**
Discounted Bill	$1,245	$1,045	-$200**	$1,286	$1,429	$143**	-$343**
Energy Burden	30%	28%	-2%**	27%	28%	1%**	-4%**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.
[1]One customer didn't have income information and was excluded from this analysis.

Table V-5A displays the impact of the HEA credit on energy burden by poverty level for LG&E. The table shows that the HEA program had the greatest impact on energy burden for customers in the lowest poverty level groups. This is because the program provides higher credits to customers to reach a targeted burden level. LG&E HEA participants with income at or below 50 percent of the poverty level had a net decrease in energy burden of 19 percentage points in 2011 and a net decrease of 18 percentage points in 2012. Despite the large reductions, these participants still had mean energy burdens of approximately 20 percent while receiving the HEA credit.

Table V-5A
LG&E Energy Burden Impacts
By Poverty Group

2011 Impacts									
Poverty Group	Treatment Group				Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
≤ 50%	69	36%	20%	-16%**	60	36%	39%	3%*	-19%**
51-100%	240	17%	12%	-5%**	179	17%	18%	1%**	-6%**
101-130%	76	13%	9%	-3%**	70	12%	13%	1%**	-4%**
Total	**385[1]**	**20%**	**13%**	**-7%****	**309[2]**	**20%**	**21%**	**1%****	**-8%****

2012 Impacts									
Poverty Group	Treatment Group				Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
≤ 50%	88	39%	21%	-18%**	37	35%	35%	>-1%	-18%**
51-100%	265	18%	11%	-7%**	151	18%	17%	-1%**	-7%**
101-130%	90	13%	8%	-5%**	46	13%	13%	>-1%**	-4%**
Total	**443[3]**	**21%**	**12%**	**-9%****	**234[4]**	**19%**	**19%**	**-1%****	**-8%****

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.
[1]208 customers didn't have income information and were excluded from this analysis. [2]184 customers didn't have income information and were excluded from this analysis. [3]220 customers didn't have income information and were excluded from this analysis. [4]165 customers didn't have income information and were excluded from this analysis.

Table V-5B displays the impact of the HEA credit on energy burden by poverty level for KU participants. Because the KU HEA credit is the same for all participants, the reduction in energy burden was uniform across the three poverty levels shown in the table. Participants with income at or below 50 percent of the poverty level had an initial mean energy burden of 61 percent in 2011 and 65 percent in 2012. Therefore, with the reduction of four percentage points in 2011 and two percentage points in 2012, their burden while participating in the HEA was still approximately 60 percent. The group with poverty levels between 101 and 130 percent had their burden reduced from nine percent or seven percent in the pre-enrollment period to six percent while participating in the program.

Table V-5B
KU Energy Burden Impacts
By Poverty Group

2011 Impacts									
Poverty Group	Treatment Group				Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
≤ 50%	188	61%	57%	-4%**	113	61%	60%	-1%*	-3%**
51-100%	282	12%	8%	-4%**	155	12%	11%	-1%**	-3%**
101-130%	145	9%	6%	-3%**	69	8%	7%	-1%**	-2%**
Total	615[1]	26%	23%	-4%**	337	28%	27%	-1%**	-3%**

2012 Impacts									
Poverty Group	Treatment Group				Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
≤ 50%	204	65%	62%	-2%**	145	62%	63%	1%**	-4%**
51-100%	249	12%	9%	-2%**	225	12%	13%	1%**	-4%**
101-130%	113	7%	6%	-2%**	83	8%	9%	1%**	-3%**
Total	566	30%	28%	-2%**	453	27%	28%	1%**	-4%**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.
[1] One customer didn't have income information and was excluded from this analysis.

E. *Payment Impacts*

This section analyzes the impact of HEA program participation on bill payment and bill coverage rates. Table V-6A displays the statistics on bills and payments for LG&E HEA participants. Key findings are as follows.

- *Number of Customer Payments:* The program resulted in a decline in payment regularity. Customers decreased their payments made from 9.5 in the year prior to enrollment to 8.8 in the year following enrollment in 2011 and from 10.6 in the year prior to enrollment to 8.1 in the year following enrollment in 2012. The net change was a decrease of 0.7 payments in 2011 and 1.7 in 2012.

- *Customer Payments:* HEA participants reduced their cash payments made by an average of $385 in 2011 and by $713 in 2012. The net change in customer payments was a decrease of $427 in 2011 and $535 in 2012.

- *Total Coverage Rate:* The total coverage rate is defined as the percent of the billed amount that is paid through both customer payments and assistance payments. The 2011 participants increased their total coverage rate from 92 to 101 percent and the 2012 participants increased their total coverage rate from 95 to 96 percent. The net change was an increase of nine percentage points in 2011 and eight percentage points in 2012.

- *Balance:* Average balances for HEA program participants decreased from $338 to $92 in 2011 and from $277 to $96 in 2012. The net change was a decrease of $143 in 2011 and a decrease of $188 in 2012.

Table V-6A
LG&E Bill and Payment Impacts

2011 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	593			493			
Electric charges	$1,150	$1,155	$5	$1,215	$1,272	$57**	-$51**
Gas Charges	$629	$660	$31**	$648	$697	$50**	-$18*
Electric & Gas Charges	$1,778	$1,815	$37**	$1,862	$1,969	$107**	-$70**
# of customer payments	9.5	8.8	-0.7**	10.5	10.5	0.1	-0.7**
Customer payment	$1,389	$1,004	-$385**	$1,621	$1,663	$42#	-$427**
HEA benefit	$0	$602	$602**	$0	$0	$0	$602**
LIHEAP	$263	$225	-$37**	$162	$217	$55**	-$92**
Other credits	-$1	-$1	<$1	$0	>-$1	>-$1	<$1
Total credits	$1,651	$1,830	$179**	$1,783	$1,879	$97**	$83**
Shortfall	$127	-$15	-$142**	$80	$90	$10	-$152**
Customer coverage rate	76%	55%	-21%**	86%	84%	-2%*	-19%**
Total coverage rate	92%	101%	9%**	95%	95%	<1%	9%**
Ending Balance[1]	$338	$92	-$246**	$317	$214	-$103**	-$143**

2012 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	663			399			
Electric charges	$1,278	$1,279	$1	$1,226	$1,272	$47**	-$45**
Gas Charges	$686	$557	-$129**	$667	$553	-$114**	-$15#
Electric & Gas Charges	$1,964	$1,836	-$128**	$1,893	$1,825	-$68**	-$60**
# of customer payments	10.6	8.1	-2.5**	10.7	10.0	-0.8**	-1.7**
Customer payment	$1,650	$937	-$713**	$1,649	$1,471	-$178**	-$535**
HEA benefit	$0	$660	$660**	$0	$0	$0	$660**
LIHEAP	$221	$172	-$48**	$170	$167	-$3	-$46**
Other credits	>-$1	-$1	-$1	$0	$0	$0	-$1
Total credits	$1,871	$1,769	-$102**	$1,818	$1,638	-$181**	$79**

2012 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Shortfall	$93	$67	-$26	$75	$188	$113**	-$139**
Customer coverage rate	83%	51%	-32%**	86%	80%	-7%**	-26%**
Total coverage rate	95%	96%	1%	96%	89%	-6%**	8%**
Ending Balance	$277	$96	-$180**	$206	$214	$7	-$188**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.
[1] One comparison group customer did not have consistent balance data and was excluded from this analysis.

Table V-6B displays statistics on bills and payments for the 2011 and 2012 KU HEA participants. The table shows the following results.

- *Number of Customer Payments:* The program resulted in a decline in payment regularity. Customers decreased their payments made from 11.0 in the year prior to enrollment to 9.5 in the year following enrollment in 2011 and from 10.4 in the year prior to enrollment to 9.1 in the year following enrollment in 2012. The net change was a decrease of 1.0 payments in 2011 and 1.1 payments in 2012.

- *Customer Payments:* HEA participants reduced their cash payments made by an average of $370 in 2011 and by $165 in 2012. The net change in customer payments was a decrease of $206 in 2011 and $228 in 2012.

- *Total Coverage Rate:* The 2011 participants increased their total coverage rate from 101 to 102 percent and the 2012 participants decreased their total coverage rate from 102 to 100 percent. The net change was an increase of one percentage point in both 2011 and in 2012.

- *Balance:* Average balances for HEA program participants decreased from $256 to $142 in 2011 and from $204 to $177 in 2012. The net change was a decrease of $110 in 2011 and a decrease of $71 in 2012.

Table V-6B
KU Bill and Payment Impacts

2011 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	616			337			
Electric charges	$1,391	$1,260	-$131**	$1,309	$1,215	-$93**	-$37*
# of customer payments	11.0	9.5	-1.6**	10.8	10.3	-0.6**	-1.0**
Customer payment	$1,287	$917	-$370**	$1,275	$1,111	-$164**	-$206**

2011 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
HEA benefit	$0	$267	$267**	$0	$0	$0	$267**
LIHEAP	$116	$100	-$17**	$82	$125	$44**	-$61**
Other credits	>-$1	>-$1	<$1	>-$1	$0	<$1	<$1
Total credits	$1,403	$1,283	-$120**	$1,357	$1,236	-$120**	<$1
Shortfall	-$12	-$23	-$11	-$48	-$21	$27#	-$38*
Customer coverage rate	92%	68%	-25%**	96%	91%	-5%**	-20%**
Total coverage rate	101%	102%	1%#	102%	102%	<1%	1%
Ending balance	$256	$142	-$115**	$186	$181	-$5	-$110**

2012 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	566			453			
Electric charges	$1,245	$1,394	$149**	$1,286	$1,429	$143**	$6
# of customer payments	10.4	9.1	-1.3**	11.2	11.0	-0.2#	-1.1**
Customer payment	$1,110	$945	-$165**	$1,242	$1,305	$63**	-$228**
HEA benefit	$0	$349	$349**	$0	$0	$0	$349**
LIHEAP	$152	$93	-$59**	$84	$134	$50**	-$109**
Other credits	$0	>-$1	>-$1	$0	$0	$0	>-$1
Total credits	$1,262	$1,387	$125**	$1,326	$1,439	$113**	$12
Shortfall	-$17	$7	$24**	-$40	-$10	$30**	-$6
Customer coverage rate	89%	23%	-26%**	98%	92%	-6%**	-20%**
Total coverage rate	102%	100%	-2%*	104%	101%	-3%**	1%
Ending Balance	$204	$177	-$28**	$188	$232	$44**	-$71**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table V-7A displays the total bill coverage rate in the pre and post period for the LG&E HEA participants. The table shows that while 26 percent of the 2011 LG&E HEA participants paid their full bill prior to enrollment, 49 percent paid their full bill while participating in the program. The 2011 comparison group did not change. The 2012 treatment group did not have as large of an increase in the percent that paid their full bill, but the comparison group had a large decline in the percent that paid the full bill, so the net change was approximately the same. The difference may be caused by the fact that while charges declined for the treatment and comparison groups in 2011, charges increased for both groups in 2012. These differences emphasize the importance of utilizing a comparison group.

Table V-7A
LG&E Total Coverage Rate Distribution

	2011 Treatment		2011 Comparison		2012 Treatment		2012 Comparison	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Observations	593		493		663		399	
≥100%	26%	49%	30%	31%	31%	35%	34%	17%
90% - 99%	28%	29%	33%	30%	29%	31%	31%	32%
80% - 89%	26%	17%	25%	27%	26%	24%	26%	30%
<80%	19%	6%	12%	12%	14%	10%	10%	21%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table V-7B displays the total bill coverage rate in the pre and post period for the KU HEA participants. The table does not show an improvement in the percent that paid their full bill. The decline in the treatment group is approximately the same as the decline for the comparison group.

Table V-7B
KU Total Coverage Rate Distribution

	2011 Treatment		2011 Comparison		2012 Treatment		2012 Comparison	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Observations	616		337		566		453	
≥100%	58%	56%	66%	60%	59%	49%	66%	58%
90% - 99%	29%	34%	23%	32%	30%	38%	26%	32%
80% - 89%	9%	7%	7%	6%	8%	12%	6%	8%
<80%	5%	2%	5%	1%	3%	1%	2%	2%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Tables V-8 displays the percent of participants who paid the full bill in the pre and post period by poverty group. The tables show that the LG&E program generally had a larger impact for the lower poverty level groups due to the greater benefit. The KU program did not have the same level of impact.

Table V-8
Percent that Paid Full Bill
By Poverty Group

LG&E Treatment and Comparison Groups								
Poverty Level	2011 Treatment		2011 Comparison		2012 Treatment		2012 Comparison	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
≤ 50%	30%	64%	32%	38%	40%	49%	32%	22%
51-100%	22%	50%	27%	31%	27%	31%	36%	15%
101-130%	18%	34%	24%	17%	20%	32%	13%	15%
Missing	32%	48%	35%	35%	37%	36%	37%	18%

KU Treatment and Comparison Groups								
Poverty Level	2011 Treatment[1]		2011 Comparison		2012 Treatment		2012 Comparison	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
≤ 50%	62%	53%	65%	61%	61%	45%	64%	56%
51-100%	55%	60%	66%	61%	59%	51%	65%	60%
101-130%	58%	52%	70%	58%	57%	52%	69%	53%

[1] One customer did not have income information and was excluded from this analysis.

F. LIHEAP Impacts

This section analyzes the impact of HEA program participation on LIHEAP receipt. This is an important aspect of the analysis, as a specific goal of the HEA is to reduce the need for LIHEAP Crisis assistance. However, there were issues with the availability of data on type of LIHEAP assistance received. While the LG&E program provides type of LIHEAP data to the utility, the KU program did not have the breakdown available for the full time period needed. Therefore, an assignment process was used to do the best possible job with the available data to assign benefits received to crisis or regular LIHEAP types. The following factors were used to designate the benefit type where it was not provided. If a customer needed an assignment at any point in the analysis, all benefit types were assigned for that customer.

- Month Received – In the data that were designated as crisis or regular LIHEAP, there was a distinct pattern to the type of benefit.
  - No regular LIHEAP payments were made in April, May, June, and July, and regular LIHEAP payments were very rarely made in August or September.
  - Crisis benefit payments were only made in January, February, March, April, and May.

- Benefit Amount – There is a benefit matrix that specifies the amount of benefit to be paid based on poverty level, whether the housing is subsidized, and heating fuel.
  - Therefore, payments that were made in January, February, March, October, November, and December and were equal to an amount listed in the benefit matrix (or

a regular amount listed in the labelled part of the data for regular LIHEAP) were considered to be Regular LIHEAP.

- Payments made in January, February, or March that were included in the matrix or in labelled LIHEAP data received from the utility were considered to be regular LIHEAP.
- Payments made in January, February, or March that were not included in the matrix or in labelled LIHEAP data received from the utility were considered to be Crisis assistance.
- Payments made in October, November, or December that were not included in the matrix or in labelled LIHEAP data received from the utility were considered to be Emergency assistance (very rare).

Table V-9A displays the percent of LG&E participants who received LIHEAP Regular or Crisis benefits in the pre and post periods. One of the goals of the HEA is to reduce the percent of participants who require Crisis assistance. The table shows that the 2011 treatment groups had a reduction in the percent that received both Regular and Crisis assistance and the 2012 participants were less likely to receive Regular LIHEAP assistance.

Table V-9A
LG&E LIHEAP Receipt Impacts

2011 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	593			493			
LIHEAP Crisis	55%	52%	-3%	38%	48%	11%**	-14%**
LIHEAP Regular	41%	37%	-4%	19%	39%	19%**	-23%**
LIHEAP Crisis or Regular	69%	67%	-1%	44%	68%	24%**	-26%**

2012 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	663			399			
LIHEAP Crisis	51%	48%	-3%	46%	40%	-6%*	3%
LIHEAP Regular	36%	29%	-7%**	13%	35%	22%**	-28%**
LIHEAP Crisis or Regular	68%	64%	-4%	52%	62%	10%**	-14%**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table V-9B displays the percent of KU participants who received LIHEAP Regular or Crisis benefits in the pre and post periods. The table shows a net reduction in Crisis benefits for both groups. While the 2011 participants had a net increase in Regular LIHEAP, the 2012 participants had a net decline in the percent that received Regular LIHEAP. We cannot be completely confident in these results, given the assignment of LIHEAP type that needed to be done, as described above.

Table V-9B
KU LIHEAP Receipt Impacts

2011 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	616			337			
LIHEAP Crisis	35%	36%	1%	23%	63%	40%**	-39%**
LIHEAP Regular	17%	60%	43%**	12%	45%	33%**	10%**
LIHEAP Crisis or Regular	42%	73%	31%**	26%	81%	55%**	-24%**

2012 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	566			453			
LIHEAP Crisis	64%	35%	-29%**	42%	50%	7%**	-37%**
LIHEAP Regular	49%	27%	-22%**	24%	49%	25%**	-46%**
LIHEAP Crisis or Regular	83%	53%	-30%**	51%	77%	27%**	-56%**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table V-10A displays LIHEAP payments for LG&E HEA participants. The table shows that the 2011 treatment group experienced a net decrease in both LIHEAP Crisis benefits and LIHEAP Regular benefits and the 2012 group experienced a net decrease in Regular LIHEAP benefits.

Table V-10A
LG&E LIHEAP Dollar Impacts

	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
2011 Analysis Group							
Observations	593			493			
LIHEAP Crisis	$179	$168	-$11	$124	$157	$33**	-$44**
LIHEAP Regular	$83	$57	-$26**	$38	$60	$22**	-$48**
All LIHEAP	$263	$225	-$37**	$162	$217	$55**	-$92**
2012 Analysis Group							
Observations	663			399			
LIHEAP Crisis	$165	$127	-$38**	$150	$114	-$36**	-$2

	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
LIHEAP Regular	$56	$46	-$10**	$20	$53	$33**	-$43**
All LIHEAP	$221	$172	-$48**	$170	$167	-$3	-$46**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table V-10B displays LIHEAP payments for KU analysis groups. The table shows that both 2011 and 2012 treatment groups experienced a net decrease in LIHEAP Crisis benefits and the 2012 group experienced a net decrease in Regular LIHEAP benefits.

Table V-10B
KU LIHEAP Dollar Impacts

2011 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	616			337			
LIHEAP Crisis	$98	$85	-$13#	$69	$158	$89**	-$103**
LIHEAP Regular	$18	$63	$45**	$13	$47	$35**	$11*
All LIHEAP	$116	$149	$32**	$82	$206	$124**	-$92**

2012 Impacts							
	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
Observations	566			453			
LIHEAP Crisis	$163	$73	-$90**	$111	$113	$2	-$91**
LIHEAP Regular	$49	$31	-$19**	$25	$59	$34**	-$53**
All LIHEAP	$212	$106	-$106**	$137	$173	$36**	-$142**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

G. *Collection Impacts*

This section analyzes the impact of HEA program participation on collections actions. One of the goals of the program is that participants will have a reduced incidence of disconnect notices ("Brown Bills") and service terminations.

Table V-11A displays the impacts for the LG&E HEA participants. The table shows that participants had fewer disconnect notices and were less likely to experience service terminations after enrolling in the program. While the 2011 participants averaged 4.6 notices in the pre period, they averaged 2.8 notices in the post period. The comparison group had an increase in disconnect notices, resulting in a net reduction of 2.6 notices. Service terminations declined by 18 percentage points.

Table V-11A
LG&E Collections Impacts

	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
2011 Impacts							
Observations	593			493			
Number of Disconnect Notices	4.6	2.8	-1.7**	5.9	6.8	0.9**	-2.6**
Service Termination (%)	27%	13%	-14%**	32%	35%	4%	-18%**
2012 Impacts							
Observations	663			399			
Number of Disconnect Notices	6.7	3.2	-3.5**	6.2	6.2	>-0.1	-3.5**
Service Termination (%)	33%	12%	-22%**	26%	21%	-5%#	-17%**

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table V-11B displays the impacts for the KU HEA participants. The table shows that participants had fewer disconnect notices and were less likely to experience service terminations after enrolling in the program. While the 2011 participants averaged 4.6 notices in the pre period, they averaged 4.4 notices in the post period. The comparison group had an increase in disconnect notices, resulting in a net reduction of 0.4 notices. Service terminations declined by ten percentage points. These impacts were noticeably smaller than those experienced by the LG&E participants.

Table V-11B
KU Collections Impacts

	Treatment Group			Comparison Group			Net Change
	Pre	Post	Change	Pre	Post	Change	
2011 Analysis Group							
Observations	616			337			
Number of Disconnect Notices	4.6	4.4	-0.2*	4.7	4.9	0.2	-0.4*
Service Termination (%)	28%	18%	-10%**	25%	25%	>-1%	-10%**
2012 Analysis Group							
Observations	566			453			
Number of Disconnect Notices	5.3	4.7	-0.5**	5.5	5.4	-0.1	-0.5**
Service Termination (%)	27%	25%	-2%	28%	32%	5%#	-6%#

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table V-12A displays the percent of LG&E analysis group customers with service terminations by poverty group. The table shows that the net impacts are largest for the two lowest poverty groups, related to the fact that these groups have the greatest benefits and the largest reduction in energy burden.

Table V-12A
LG&E Service Termination Impacts
By Poverty Group

	Treatment Group				Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
2011 Analysis Group									
≤ 50%	69	38%	16%	-22%**	60	38%	35%	-3%	-18%#
51%-100%	240	22%	9%	-13%**	179	23%	31%	7%#	-20%**
101%-130%	76	18%	4%	-14%**	70	27%	24%	-3%	-12%
Missing	208	34%	20%	-13%**	184	39%	44%	5%	-18%**
2012 Analysis Group									
≤ 50%	88	39%	14%	-25%**	37	19%	22%	3%	-28%**
51%-100%	265	28%	6%	-22%**	151	20%	19%	-1%	-21%**
101%-130%	90	21%	2%	-19%**	46	17%	11%	-7%	-12%#
Missing	220	43%	22%	-21%**	165	35%	26%	-8%#	-12%*

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table V-14B displays the percent of KU analysis group customers with service termination by poverty group. These results also show the greatest impact for customers with income at or below 50 percent of the poverty level in 2011.

Table V-12B
KU Service Termination Impacts
By Poverty Group

	Treatment Group				Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
2011 Impacts[1]									
≤ 50%	188	49%	31%	-18%**	113	35%	38%	3%	-21%**
51%-100%	282	23%	13%	-11%**	155	19%	21%	1%	-12%*
101%-130%	145	11%	12%	<1%	69	22%	13%	-9%	9%#

	Treatment Group				Comparison Group				Net Change
	Obs.	Pre	Post	Change	Obs.	Pre	Post	Change	
2012 Impacts									
≤ 50%	204	40%	39%	>-1%	145	39%	47%	8%	-8%
51%-100%	249	25%	18%	-7%*	225	24%	25%	1%	-8%#
101%-130%	113	10%	17%	7%#	83	19%	28%	8%	-1%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.
[1] One treatment group customer didn't have income information and were excluded from this analysis.

H. Impact Summary

This section provides a summary of the findings from the impact analysis.

- Affordability
  - The HEA program resulted in a large increase in affordability for LG&E participants who faced a high energy burden averaging 20 percent prior to benefit receipt. The participants received an average benefit of $649 in 2011 and $689 in 2012 resulting in a net decline in energy burden of about eight percentage points.

  - The KU HEA participants received lower average benefits and had a smaller affordability improvement. The 2011 participants received an average HEA benefit of $267 and the 2012 participants received an average HEA benefit of $349. This benefit reduced the mean energy burden from 26 percent in 2011 and from 30 percent in 2012. The net change was a decline of three percentage points in 2011 and four percentage points in 2012.

  - The LG&E HEA program provides benefits targeted to reduce energy burden, while the KU program provides the same benefit for all participants. As a result, the LG&E program had the greatest impact on energy burden for customers in the lowest poverty level groups. LG&E HEA participants with income at or below 50 percent of the poverty level had a net decrease in energy burden of 19 percentage points in 2011 and a net decrease of 18 percentage points in 2012. Despite the large reductions, these participants still had a mean energy burden of approximately 20 percent while receiving the HEA credit. Because the KU HEA credit is the same for all participants, the reduction in energy burden was uniform across poverty levels. Participants with income at or below 50 percent of the poverty level had an initial mean energy burden of 61 percent in 2011 and 65 percent in 2012. Therefore, with the reduction of four percentage points in 2011 and two percentage points in 2012, their burden while participating in the HEA was still approximately 60 percent. The group with poverty levels between 101 and 130 percent had their burden reduced from nine percent or seven percent in the pre-enrollment period to six percent while participating in the program.

- Payment Impacts
  - Number of Customer Payments: The program resulted in a decline in payment regularity for both the LG&E and KU programs. Customers averaged 10 to 11 payments in their year prior to enrollment and had a net reduction of one payment over the year following program enrollment.
  - Total Coverage Rate: LG&E participants had a net increase in their total coverage rate of eight to nine percentage points and KU participants had a net increase of one percentage point. The LG&E program generally had a larger impact for the lower poverty level groups due to the greater benefit. The KU program did not have the same level of impact.
  - Balance: Average balances for HEA program participants showed a net decline of about $150 on average for LG&E participants and of about $100 on average for KU participants.
- LIHEAP Impacts: The LIHEAP impact results are not definitive due to data issues that are described in the analysis section, but point to the following potential impacts.
  - LIHEAP Crisis: The 2011 LG&E the 2011 KU participants were less likely to receive LIHEAP Crisis assistance in the year following enrollment.
  - LIHEAP Regular: The 2011 and the 2012 LG&E and KU participants were less likely to receive LIHEAP Regular assistance in the year following enrollment.
- Collections Impacts
  - Brown Bills: LG&E HEA participants had fewer disconnect notices after enrolling in the program. While the 2011 participants averaged 4.6 notices in the pre period, they averaged 2.8 notices in the post period, and had a net reduction of 2.6 notices. KU participants averaged 4.6 notices in the pre period and 4.4 notices in the post period, and had a net reduction of 0.4 notices.
  - Service Terminations: LG&E HEA participants were less likely to experience service terminations after enrolling in the program. Service terminations declined from about 30 percent in the pre period, for a net reduction of 18 percentage points. KU participants had a net decline in service terminations of about 8 percentage points, from their starting point of 28 percent with service terminations in the pre period.

VI. Summary of Findings and Recommendations

The LG&E and KU HEA Programs provide important benefits to low-income households by increasing the affordability of their energy bills, providing referrals to other services, and assisting customers to enroll in weatherization programs. The impacts of the program were found both in the participant interviews and the impact analysis results. The structure of the LG&E program results in greater benefits for program participants. This section provides a summary of findings and recommendations based on all of the analyses in this evaluation.

A. *Administration*

The HEA is effectively managed by LG&E/KU and the agencies that implement the program. The agencies provide information to customers and enroll them in the program. Customers had very positive feedback with respect to the information and support provided by the agencies. The one key weak point in program administration is the management of important program data.

1. Utility Management

LG&E and KU provide oversight to the agencies in the program implementation. They require an annual audit of the agencies, check program expenses, and review program data. LG&E/KU reported that they may develop internal management reports and provide more data management assistance to the agencies if the program is made permanent. This would help LG&E/KU to do a better job of monitoring the program. *LG&E/KU should provide greater oversight on the agencies' data collection process to ensure that the data required for management and evaluation are available. If necessary, LG&E/KU should provide support to the agencies to assist them in developing systems that provide adequate program data.*[1]

2. Agency Management

Most respondents stated that they were very satisfied with the agency. Respondents reported that staff at the agency were helpful and respectful, that they were very satisfied with the program, and commented about how the program had helped them. *The agencies are an important link to the community and should continue to implement the programs.*

[1] LG&E/KU can provide checks on the program data by matching program administrative data with LG&E/KU transactions data to ensure that all customers who receive HEA benefits are accurately recorded in the HEA databases and have complete program and demographic data. LG&E can also check that all customers listed as current participants in the program database are currently receiving HEA benefits in the transactions data to ensure that customers who are no longer enrolled are noted as such in the program database.

3. HEA Program Data

Program databases maintained by AEC and CAC were not complete or consistent with the information in the utility's transactions file. A large percentage of the LG&E participants were missing demographic data. Additionally, the LG&E database did not track the amount of arrearage forgiveness provided to each participant.[2] *The agencies need a system to ensure that clean data are available on program enrollment dates and removal dates, and that customer demographic data are associated with each enrollment. Benefits should be identified by date provided and type (credit or arrearage forgiveness).*

4. LIHEAP Data

One of the performance metrics for the HEA program is a reduction in need for LIHEAP Crisis assistance. However, data on receipt of LIHEAP Crisis assistance were not consistently available. *LG&E/KU should determine a procedure to ensure that LIHEAP Crisis and Subsidy data are available. (Note that LG&E/KU has corrected this issue as of November 2014.)*

B. *Participation*

Participation in the HEA has increased for the LG&E program from 2010 through 2014, but has declined for the KU program. In 2013, 2,515 LG&E customers received at least one HEA credit and 3,511 KU participants received at least one HEA credit.

1. Enrollment Levels

KU HEA funding was underspent by at least $100,000 in ever year from 2009 through 2013 except 2010. Over these five years, the program was underspent by over $600,000. As of January 2014, the KU HEA balance was over $800,000, although spending increased with the increase in monthly benefits from $44 to $88 per month in March 2013 and the balance has been reduced to under $500,000 as of October 2014. LG&E HEA funding was underspent by at least $200,000 in three of the five years examined. As of January 2014, the LG&E balance was over $800,000, and was still over $600,000 in October 2014.

Program underspending is problematic, as there is additional need for the program. The KU HEA has had a large wait list for enrollment of over 1,000 customers, and the program should use available funds to help customers who need assistance. During the participant interviews, several respondents noted that they were placed on a waiting list prior to enrollment and some noted that the delay for enrollment was quite long. *KU and LG&E should develop a method to ensure that they use available funds to provide HEA benefits and do not have such a large program balance.*

[2] AEC is currently in the process of documenting their current database so they can develop a new one.

2. County-Level Enrollment

LG&E/KU reported that 92 percent of LG&E customers reside in Jefferson County where AEC is located, and 28 percent of KU customers reside in Fayette County where CAC is located. While the percent of LG&E HEA participants in Jefferson County approximately matches the 92 percent of LG&E customers that reside there, the percent of KU HEA participants in Fayette County, 39 percent, is significantly higher than the 28 percent that would represent the distribution of customers. *KU should make an effort to distribute additional participation to other counties. The utilities should compare their customer distributions to the participation distribution by county to determine if additional counties are underrepresented.*

C. *Enrollment, Weatherization, and LIHEAP*

The LG&E and KU programs have different enrollment procedures and different weatherization and LIHEAP referral procedures.

1. Program Orientation

The LG&E program invites LIHEAP recipients to attend an HEA orientation session and only those who attend the session may enroll in the LG&E HEA. While this approach may create a barrier to enrollment for some clients, AEC works to remove any barriers by providing sessions at various times, including afternoons, evenings, and some weekends; holding the sessions in various locations and near public transportation; and providing orientation over the phone for homebound clients. The orientation session provides important information to potential participants and appears to do a better job of informing them of the program requirements than KU's in-office enrollment visit. Most LG&E respondents to the participant survey stated that the orientation session was very helpful and they were likely to mention the information that was provided about energy conservation. They seemed to be more likely to understand the importance of paying their bill to remain in the program. However, two of the LG&E HEA respondents did state that the timing or length of the required orientation session was a barrier.

The KU program also provides accommodations for customers who cannot come to the office to enroll. If a customer is homebound, the agency would start the application and then visit the customer's home for application signing and documentation retrieval. Some customers mail back documents or the agency mails the application and has the customer mail it back. Additionally, some customers designate a representative, such as a relative, friend, or neighbor, who has permission to apply on behalf of the customer.

The research found that the LG&E participants had a better understanding of the program than the KU participants and were more likely to report that they received referrals and participated in weatherization.

KU should consider offering a formal orientation session and they should develop a guide for intake workers to ensure that important program and conservation information is *provided at the time of HEA intake. (Note: such a guide was not provided to the evaluators with program materials.)*

2. **Weatherization Enrollment**

One of the goals of the program is to enroll clients for weatherization services and participation in weatherization is a stated requirement for HEA program participation. Participants who responded to the evaluation survey were asked whether they received weatherization as a result of participating in the HEA. While 23 of the 26 LG&E participants reported that they had received weatherization, nine of the 21 KU participants reported that they received weatherization. The majority of the respondents who said they received weatherization stated that their bills were lower and their home was more comfortable.

Two of the KU respondents reported that they had turned down weatherization services. The KU agency representative noted that CAC did not remove clients who turned down weatherization because they did not track these data.

As weatherization participation is an HEA requirement and a program metric, the agencies should track participation in their program databases and ensure that customers who refuse the program are removed from the HEA.

3. **Weatherization Workshop**

The LG&E HEA program manager at AEC reported that they have faced challenges with many landlords refusing to provide approval for weatherization services this year. AEC worked with Project Warm to provide a weatherization workshop for 30 customers who faced this issue. The workshop provided information on covering windows with plastic and other do-it-yourself weatherization projects. AEC reviewed attendees' energy usage in the billing cycle before and after this workshop and found that usage declined for most of the workshop participants. *KU should also implement a workshop approach for participants whose landlords do not allow weatherization. (KU would need to work with other agencies to implement workshops in their counties. This could only be offered in counties where HEA participation was high enough to warrant the investment.)*

4. **Re-Certification and LIHEAP Application**

The review of program data found that most HEA participants remain in the program for one or two years. Some may no longer be income eligible and some are not eligible because they are behind on their bill, but many do not re-certify as required by KU or do not receive LIHEAP as required by LG&E. CAC's IT office performs auto enrollment for all CAC HEA participants at the beginning of each LIHEAP season and KU HEA participants from other agencies apply for LIHEAP at their agency. *CAC should implement the LIHEAP auto enrollment process at the other agencies and AEC should implement this process for their HEA participants. As the AEC LG&E participants are* *not re-enrolled in the HEA if they do not apply for LIHEAP, this may improve program retention for LG&E's HEA participants.*

D. HEA Design and Impacts

The LG&E and KU programs have quite different benefit designs.

- The LG&E benefit is provided every month, but the credit amount varies by month. The KU benefit is the same amount each of the seven months of the year that it is provided.
- The LG&E benefit is provided to reach a targeted energy burden that varies by household size. The KU benefit is the same for every participant.
- The LG&E benefit averaged $641 in 2013 and the KU benefit averaged $391. The impact analysis focuses on 2011 and 2012 when LG&E benefits averaged about $600 and KU benefits averaged approximately $200.
- The maximum annual LG&E benefit is $1,000 and the maximum annual KU benefit is $616.
- The LG&E HEA program provides arrearage forgiveness of up to $1,000 at the first enrollment and the KU HEA program does not provide arrearage forgiveness.

The impact analysis and the participant interviews showed that the program had positive impacts on affordability, bill payment coverage rates, brown bills and service terminations, and participants' balances.

Participants were much less likely to report that they had a very difficult time paying their LG&E or KU bill when they were participating in the program than they did prior to participating in the program and they were much less likely to report that they had a very difficult time meeting their other needs when they were participating in the program than they were prior to participating in the program. When asked how important the HEA program had been in helping them to meet their needs, almost all respondents said that it had been very important.

The impact analysis showed significantly greater benefits for LG&E participants.

- **Affordability**: The LG&E participants had a larger benefit and a larger reduction in energy burdens than the KU participants, especially for those in the lowest poverty level group with the highest energy burdens.
- **Payments**: The program resulted in a decline in payment regularity for both the LG&E and KU programs.
- **Total Coverage Rate:** LG&E participants had a significant increase in their total coverage rate but the KU participants did not.

- **Balance:** Both LG&E and KU participants had a large net decline in their balances.

- **LIHEAP:** The 2011 LG&E the 2011 KU participants were less likely to receive LIHEAP Crisis assistance in the year following enrollment. The 2011 and the 2012 LG&E and KU participants were less likely to receive LIHEAP Subsidy assistance in the year following enrollment.

- **Collections**: Both LG&E and KU participants had reductions in brown bills and service terminations, but the impact was larger for the LG&E participants.

1. Benefit Level

The KU program provides a fixed $88 dollar credit for seven months of the year. The LG&E HEA program provides an annual benefit amount ranging from $200 to $1,000 depending on energy burden, where payments are made every month of the year and vary by month.[3] The impact analysis focuses on 2011 and 2012 when LG&E benefits averaged about $600 and KU benefits averaged around $200. *While KU benefits are at a higher level now, the analysis suggests that the KU program should consider higher benefit levels to achieve a significant impact for HEA participants.*

2. Benefit Structure

The impact analysis showed that the LG&E structure provides much greater benefits to participants with higher energy burdens and has a larger impact for customers who need the assistance the most. *KU should re-design their benefits to provide higher benefits to customers with higher energy burdens, rather than a constant benefit amount to all participants.*

3. Arrearage Forgiveness

Low-income customers have a difficult time paying off previous bill balances, as they often find current bills unaffordable on their own without this additional burden. Arrearage forgiveness provides participants with the opportunity to begin the program with a fresh start, where they are up-to-date on paying their utility bills. *KU should add an arrearage forgiveness component to their program*

[3] AEC would like to review the benefit calculation process to assess whether a cost of living adjustment or other benefit adjustment is needed. They would like to consider increasing the percentage benefit to cover a greater part of the bill.