| IN THE MATTER OF THE JOINT   | ) |                             |
|------------------------------|---|-----------------------------|
| APPLICATION FOR APPROVAL     | ) |                             |
| OF THE ENERGY EFFICIENCY     | ) | <b>DOCKET NO. 07-083-TF</b> |
| ARKANSAS OUICK START PROGRAM | ) |                             |

# PY2016 ENERGY EFFICIENCY ARKANSAS FINAL EVALUATION REPORT

The Arkansas Department of Environmental Quality, by and through its attorney, Michael Bynum, files and attaches the document titled, *Process Evaluation of the 2016 Department of Environmental Quality – Energy Office's Energy Efficiency Program*.

Respectfully Submitted,

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY, ARKANSAS ENERGY OFFICE 1

By: /s/ J. Michael Bynum
Michael Bynum
Ark. Bar No. 2016054
5301 Northshore Drive
North Little Rock, AR 72118
Phone: (501) 682-0883

Email: bynumj@adeq.state.ar.us

#### **CERTIFICATE OF SERVICE**

I, Michael Bynum, hereby certify that a copy of the foregoing has been delivered to all parties of record by electronic mail via the Commission's Electronic Filing System on August 31, 2018.

/s/ J. Michael Bynum Michael Bynum

# Process Evaluation of the 2016 Department of Environmental Quality – Arkansas Energy Office's Arkansas Energy Efficiency Program

Pursuant to Section 9 the Rules for Conservation and Energy Efficiency Programs August, 24, 2018

PREPARED BY Anjali Gupta, PhD

Theresa Bohannan, MPH Jeremy Offenstein, PhD Adam Thomas, MS

PREPARED FOR Department of Environmental Quality – Arkansas

**Energy Office** 



ADM Associates, Inc.

# Table of Contents

| 1 | Exe | ecutive Summary   | 7  |
|---|-----|---|----|
|   | 1.1 | Key Findings  | 7  |
|   | 1.2 | Recommendations   | 8  |
| 2 | Pro | ogram Background  | 10 |
| 3 | Eva | aluation Methodology  | 11 |
| 4 | EE  | A Program Design and Operations   | 14 |
|   | 4.1 | Program Design  |    |
|   | 4.2 | Program Goals   | 14 |
|   | 4.3 | Program Staffing, Roles, and Responsibilities                           | 15 |
|   | 4.4 | Communication with Utility Stakeholders                                 | 15 |
|   | 4.5 | Data Management   | 16 |
|   | 4.6 | QA/QC Procedures  | 17 |
| 5 | Res | sidential Education and Information Outreach                            | 19 |
|   | 5.1 | Design and Goals  | 19 |
|   | 5.2 | Summary of Outreach and Education Distribution Activities               | 19 |
|   | 5.3 | Residential Publications  | 22 |
| 6 | Med | dia Promotion   | 26 |
|   | 6.1 | Design and Goals  | 26 |
|   | 6.2 | Mass Media  | 27 |
|   | 6.3 | Fuel Neutral Website  | 27 |
|   | 6.4 | Website Use   | 32 |
|   | 6.5 | Social Media  | 32 |
|   | 6.6 | Resident Efficiency Knowledge and Awareness                             | 32 |
| 7 | Cor | mmercial and Industrial Education and Information Outreach              | 43 |
|   | 7.1 | Design and Goals  | 43 |
|   | 7.2 | Training Topic Development  | 43 |
|   | 7.3 | Training Marketing and Delivery   | 44 |
|   | 7.4 | Summary of C&I Training and Outreach Activities and Training Attendance | 45 |
|   | 7.5 | Participant Feedback on Training  | 46 |
|   | 7.6 | Training Evaluations  | 55 |
|   | 7.7 | EEA Website   | 58 |

# APSC FILED Time: 8/31/2018 1:12:52 PM: Recvd 8/31/2018 1:11:38 PM: Docket 07-083-TF-Doc. 220 EEA PY2016 Evaluation Report

| 8 Key Find  | lings and Recommendations                                 | 60 |
|-------------|---|----|
| Appendix A  | Residential Survey Sample and Demographic Characteristics | 67 |
| Appendix B. | LIHEAP Eligibility  | 73 |
| Appendix C  | Residential Survey Tabulations                            | 76 |
| Appendix D  | Trainee Survey Respondent Characteristics                 | 91 |
| Appendix E. | Trainee Survey Tabulations                                | 94 |

# List of Tables

| Table 3-1: Process Evaluation Research Activities                  | 11 |
|--|----|
| Table 3-2: Summary of Primary Data Collection                      | 12 |
| Table 4-1: 2016 Numeric Goal Achievement                           | 14 |
| Table 5-1: Outreach Events PY2016 - Locations and Frequency        | 20 |
| Table 5-2: Outreach Events by Number and Packets Distributed       | 21 |
| Table 5-3: Summary of Residential Publications                     | 22 |
| Table 6-1: Reason for Visiting Website                             | 30 |
| Table 6-2: Most Useful Aspects of Website                          | 30 |
| Table 6-3: 2016 Website Analytics                                  | 32 |
| Table 6-4: Familiarity with EEA Outreach Methods                   | 34 |
| Table 6-5: Recalled Hearing about Types of Rebates                 | 35 |
| Table 6-6: Types of Utility Rebates Received                       | 36 |
| Table 6-7: Challenges to Saving Energy                             | 38 |
| Table 6-8: Efficiency Purchases Made and Planned                   | 39 |
| Table 6-9: Energy Saving Habits Changed in Last 2 Years            | 41 |
| Table 6-10: Preferred Energy Saving Information Source             | 42 |
| Table 7-1: How Learned About 2016 Seminar                          | 44 |
| Table 7-2: Summary of Budgeted and Completed C&I Training          | 45 |
| Table 7-3: Number of C&I Trainings by County                       | 46 |
| Table 7-4: Summary of Suggestions for Making Training More Useful  | 49 |
| Table 7-5: Energy Efficiency Improvements Made because of Training | 51 |
| Table 7-6: Source of Rebates and Incentives                        | 52 |
| Table 7-7: Future Trainings: Geographic Preference                 | 55 |
| Table 7-8: Provided Course Evaluations                             | 56 |
| Table 7-9: Tally of AAEE Course Evaluations                        | 57 |
| Table 7-10: EEA Website – Reasons Visited                          | 59 |
| Table 7-11: EEA Website - What Was Most Useful                     | 59 |
| Table A-1: Respondent Count by Region                              | 67 |
| Table A-2: Best Description of Your Home                           | 68 |

# APSC FILED Time: 8/31/2018 1:12:52 PM: Recvd 8/31/2018 1:11:38 PM: Docket 07-083-TF-Doc. 220 EEA PY2016 Evaluation Report

| Table A-3: From Which Utilities Do You Receive Bills? | 69 |
|---|----|
| Table A-4: Range of Pre-Tax Household Income          | 72 |
| Table D-1: 2016 Trainings Attended by Respondents     | 91 |
| Table D-2: Work Role in 2016                          | 91 |
| Table D-3: Current Job Title                          | 92 |
| Table D-4: Current Employment Sector                  | 92 |

# List of Figures

| Figure 5-1: Fact Sheet Example                                 | 24 |
|--|----|
| Figure 6-1: Sufficiency of Website Information                 | 31 |
| Figure 6-2: Website Navigability                               | 31 |
| Figure 6-3: Familiarity with Energy Efficiency Arkansas        | 33 |
| Figure 6-4: Awareness and Receipt of Utility-Sponsored Rebates | 35 |
| Figure 6-5: Energy Saving Knowledge Level                      | 37 |
| Figure 6-6: Energy Saving Effort                               | 38 |
| Figure 6-7: Energy Efficiency Actions                          | 39 |
| Figure 7-1: Motivation to Attend Training                      | 47 |
| Figure 7-2: Usefulness of Training                             | 48 |
| Figure 7-3: Most Useful About Training                         | 48 |
| Figure 7-4: Completed Audits Since Training                    | 50 |
| Figure 7-5: Impact of Training on Audit Activities             | 50 |
| Figure 7-6: Change to Maintenance Activities Since Training    | 52 |
| Figure 7-7: Topics for Future Training                         | 54 |
| Figure 7-8: Preferred Training Delivery Methods                | 54 |
| Figure A-1: Arkansas Regional Map                              | 67 |
| Figure A-2: Respondent Count by Zip Code                       | 68 |
| Figure A-3: Own or Rent Home                                   | 70 |
| Figure A-4: Age Bracket of Respondent                          | 70 |
| Figure A-5: Number Living in Household Full-Time               | 71 |
| Figure A-6: Highest Education Level of Household               | 71 |
| Figure A-7: Gender of Respondent as Determined by Surveyor     | 72 |
| Figure D-1: Years in Current Role                              | 93 |

# 1 Executive Summary

In accordance with Arkansas Public Service Commission (APSC) Rules for Conservation and Energy Efficiency Programs (CE&E Rules), the Arkansas Energy Office (AEO) engaged ADM Associates, Inc. (ADM) to conduct a process evaluation of its Energy Efficiency Arkansas (EEA) program. The ADM staff, collectively referred to as the Evaluators, evaluated EEA's 2016 Program Year (PY2016).

The EEA program is a state-wide program that encourages energy efficiency and conservation through outreach, marketing and training activities. The EEA program has three main components: 1) residential education and outreach; 2) media promotion; and 3) commercial and industrial training and outreach.

The objectives of the program are to: 1) accelerate the development of the Arkansas energy efficiency market by increasing the level of energy efficiency expertise, 2) increase awareness, among all customer classes, of the availability of cost effective energy efficiency solutions, and 3) promote participation in the comprehensive energy efficiency programs to be offered by the State's investor-owned utilities.

#### 1.1 Key Findings

The key findings of the 2016 evaluation are:

The EEA Program transitioned to a new department in 2016, a move which brought additional resources to support communication and outreach efforts. Staff noted that the new resources include a communication team who can assist with press releases and coordinate hosting facilities.

The EEA Program met its numeric goals for the number of events attended and the number of C&I trainings held. The program achieved 112% of its goal to attend 40 events. The program also achieved 105% of its goal to hold 21 C&I trainings.

**No residential trainings were held in 2016.** The delivery of residential trainings that were outlined in the Third Amended Memorandum of Understanding under the Residential Education and Outreach component, did not occur in 2016. Staff pointed to budget constraints and the resources required to transition to the program to a new department as the reasons for not offering the training.

Staff indicated that there were not any quality assurance and control procedures in place. Although staff indicated that they have not put any quality assurance and control procedures in place, some of the program activities, such as training evaluations, function to help manage program quality. That said, staff should develop a quality assurance and control plan to bring the program in line with best practices for program management.

**Utility stakeholders expressed some concerns about the level of communication.** Although some interview respondents indicated that communication with EEA Program staff had improved since 2016, the respondents indicated that opportunities to improve communication remain.

Opportunity to improve data collection and use of collected data. While the program data collection is aligned with the requirements of Protocol A in terms of the types of information

collected, opportunities to improve data collection and to make use of the collected data remain. Namely, more consistent collection of data on contacts that request materials, attend events, as well as increased consistency in the administration of training evaluations, would improve the program data. Additionally, increased follow-up with contacts who attend events and receive materials could increase engagement with the program as well as provide additional data points to monitor program effectiveness.

Opportunity to increase education of energy efficiency improvements and behaviors. Although survey-respondents are engaging in energy behavioral actions to save energy, lower awareness of some relatively lower cost measures and simple energy saving behaviors suggests the opportunities for continued education of Arkansas residents.

**Social media is an underutilized outreach strategy.** While the EEA program has a Twitter and Facebook account, the Evaluators discovered the posts were from several years ago. Staff interview respondents indicated that the departmental regulations around social media may need to be modified to allow regular postings.

Fuel-neutral website is well designed and provides useful information, but opportunities exist to improve navigation and functionality. The Evaluators identified a few issues with the website including broken links and a rebate search engine that did not return the expected result. Additionally, website use statistics indicate that there was limited website traffic in 2016.

**C&I training attendees valued the trainings provided.** A majority of respondents indicated the training was useful and some reported taking efficiency actions as a result of the training. However, training survey respondents and interviewed stakeholders indicated that there were opportunities to provide training on more advanced topics.

#### 1.2 Recommendations

The following are the key recommendations based on the evaluation of the 2016 program.

- Recommendation 1: Develop a quality control and assurance plan. A quality control and assurance plan should detail the objectives of quality control and assurance and the activities that will be monitored.
- Recommendation 2: Take steps to improve communications with utility stakeholders. Improvements in communication may address concerns raised by some utility stakeholders about the communication on program activities. Specific ways to improve overall utility communication include holding regularly scheduled conference calls and inperson meetings, provide regular (either monthly or quarterly) status reports, and look for additional ways to foster the development of a strong partnership between AEO staff and the utilities.
- **Recommendation 3:** Create a system to monitor event visitors and follow up when referrals are made to utility programs. By creating a system to track and monitor impacts, and marketing and outreach efforts, program staff will be able to determine what activities are most effective at reaching customers and how to best use limited resources.

- **Recommendation 4:** Provide improved residential and commercial training offerings across the state. Residential training is viewed as a niche area EEA could positively affect.
- Recommendation 5: Update and develop new energy efficiency educational content. Program staff indicated the fact sheets were developed about five years ago and have had minor yearly updates. It would be advantageous to revise all fact sheets and create new content to reflect technological changes.
- Recommendation 6: Expand current the current marketing and outreach in new and innovative ways. Specifically, develop a dedicated social media strategy to help build brand recognition and potentially increase traffic to the EEA website. Program staff should also explore gathering analytics (e.g., Facebook's Insights) to measure engagement and reach. At outreach events, encourage visitors to "check-in" by offering an incentive (e.g., entry to win a prize).
- Recommendation 7: Enhance the user experience with the program website. The Evaluators identified a few issues related to interacting with the website that could be improved by taking steps such as periodically checking links and modifying the layout to improve ease of navigation.
- Recommendation 8: Hold focus groups for hard-to-reach residents to identify approaches to develop strategies to engage them. Such residents include those that live in rural areas and/or are less interested in energy efficiency. Focus groups could be used to develop strategies to engage these groups based on their needs, interests, and resources.
- Recommendation 9: Develop a comprehensive training evaluation for all C&I trainings. A thorough training evaluation should include sections to gauge knowledge change, satisfaction, attitudes and beliefs, and behavior change.

# 2 Program Background

The Arkansas Energy Office (AEO) is responsible for implementing the Energy Efficiency Arkansas (EEA) program, a state-wide program that encourages energy efficiency and conservation through outreach, marketing and training activities. The program is a partnership between the Arkansas Department of Environmental Quality (AEDQ) and seven Arkansas' investor-owned electric, natural gas distribution companies and electric cooperatives. EEA is a ratepayer funded program approved by the Arkansas Public Service Commission (APSC).

The objectives of the program are to 1) accelerate the development of the Arkansas energy efficiency market by increasing the level of energy efficiency expertise, 2) increase awareness, among all customer classes, of the availability of cost effective energy efficiency solutions, and 3) promote participation in the comprehensive energy efficiency programs to be offered by the State's investor-owned utilities. As outlined in the Third Amended Memorandum of Understanding (MOU), the EEA Program is to achieve these objectives through the cost-effective delivery of relevant, consistent, and fuel neutral information and training that causes people to consume less energy through the implementation of energy efficiency and conservation measures. The EEA is to leverage the knowledge, experience, and skills of the Arkansas Energy Office and the combined resources of the undersigned utilities in providing this information and training.

On December 4, 2012, EEA staff filed the Third Amended MOU that was approved by the Commission on December 31, 2012 and was scheduled to end December 31, 2013. This MOU was extended multiple times by the Commission and the PY 2016 activities were authorized under one such extension. In 2016, EEA operated under guidelines and budgets outlined in the Third Revised MOU that approved the existing PY 2015 budgets for use in PY 2016.

In PY 2016, the Governor of Arkansas issued a directive to move the AEO from the Arkansas Economic Development Commission (AEDC) to Arkansas Department of Environmental Quality (ADEQ). In the short term, staff related the transition has been a challenge and affected information technology, logistics, and purchasing. In the long term, the EEA program may benefit from additional resources including legal staff, a social media group, a marketing department and an outreach team.

# 3 Evaluation Methodology

This chapter outlines the approach used to complete the process evaluation of the PY2016 EEA Program. The process evaluation was guided by the Arkansas Technical Reference Manual (TRM) Protocol C. Table 3-1 outlines the process evaluation activities and their relationship to the areas of investigation per Protocol C of the Arkansas TRM.

Interviews, surveys, and document review are the key components of the process evaluation. These aspects aided understanding of the 2016 EEA program design, administration, and implementation.

|                                       | Research Activities |                     |                           |                                   |                                 |
|---------------------------------------|---------------------|---------------------|---------------------------|-----------------------------------|---------------------------------|
| Recommended Areas of Investigation    | Document<br>Review  | Staff<br>Interviews | Stakeholder<br>Interviews | Training<br>Participant<br>Survey | General<br>Population<br>Survey |
| Program Design                        | ✓                   | ✓                   | ✓                         |                                   |                                 |
| Program<br>Administration             | <b>√</b>            | ✓                   | ✓                         |                                   |                                 |
| Program<br>Implementation<br>Delivery | <b>√</b>            | <b>√</b>            | <b>√</b>                  | <b>√</b>                          | <b>√</b>                        |

Table 3-1: Process Evaluation Research Activities

The Evaluators reviewed various program documents to better understand program design and objectives, as well as to assess the effectiveness of materials used in the media promotion component of the program. The documents reviewed were:

- EEA Website
- Monthly Newsletter
- Fact Sheets:
  - Heating Fact Sheet
  - Lighting & Appliances Fact Sheet
  - Water Heating Fact Sheet
  - Cooling Fact Sheet
  - Locating and Sealing Air Leaks Fact Sheet
- Home Energy Projects: An Energy Conservation Guide for Do-It-Yourselfers
- The Complete Guide to Saving Energy in the Home
- 30 Simple Things You Can do to Save Energy & Money

- Tips for Energy Savers
- Training Course Materials:
  - Brochures
  - Course Evaluations
  - o Event Survey/Sign-In Sheets

Table 3-2 summarizes the primary data collection activities, and the associated sample sizes, completed within this evaluation.

| Data Collection Activity              | Sample Size |
|---------------------------------------|-------------|
| Residential general population survey | 200         |
| Training participant survey           | 26          |
| Staff interviews                      | 3           |
| Stakeholder interviews                | 5           |

Table 3-2: Summary of Primary Data Collection

Residential general population survey. The residential survey was administered to a random sample of 200 residential contacts purchased through a third-party data provider. The sample of contacts was stratified by geography to ensure representative coverage across the state. The goal of the survey was to understand the saturation of EEA branding and energy efficiency awareness in Arkansas. Additional information on the sample design and demographic characteristics can be found in Appendix A. Appendix C provides a tabulation of all survey responses.

Training participant survey. The sample frame for the training participant survey was developed from sign-in sheets provided by EEA staff. The typed and hand-written sign-in sheets were entered into a database of 224 unique participants. Of these 224 participants, emails were available for 198, all of whom were invited to complete an on-line survey about their experiences during and since the training. Forty-seven of these e-mail addresses were undeliverable. Each contact received up to three email invitations to complete the survey. In total, 26 (11.6% of all contacts; 17% of those whose emailed invitations did not bounce back) responded by completing the survey. Information on the sample characteristics can be found in Appendix D and a tabulation of all responses are provided in Appendix E.

Program staff and stakeholder interviews. ADM completed interviews with Energy Efficiency Arkansas (EEA) program staff and the utility stakeholders for the purposes of gaining insight into program structure, identifying program objectives, and assessing the extent to which there are future opportunities for program improvement for the EEA programs. ADM received a list of EEA program staffing and utility contacts from the EEA staff. ADM interviewed each of the three program staff members and invited all utility stakeholder staff to the interview. In total, five utility stakeholders were interviewed.

The bulk mailings of fact sheets appropriate to seasonal climes, as outlined in the Third Amended MOU, was not operational in 2016. Therefore, the planned evaluation activity to complete interviews with these recipients was not completed by the Evaluators.

# 4 EEA Program Design and Operations

This section summarizes key findings related to the overall program design, operations, and interactions with utility stakeholders. The findings are largely based on interviews conducted with Energy Efficiency Arkansas (EEA) program staff and the utility stakeholders for the purposes of gaining insight into program structure, identifying program objectives, and assessing the extent to which there are future opportunities for program improvement for the EEA programs. Information specific to each of the program components is presented in Chapters 5, 6, and 7.

The Evaluators interviewed the associate director, facilitator, and the outreach and training manager from the Arkansas Energy Office (AEO). Program staff indicated they had been with the EEA programs from 2.5 to 6.5 years. The Evaluators also interviewed five utility stakeholders, four were involved with the program in 2016 and one was not.

#### 4.1 Program Design

The EEA program has three main components: 1) residential education and outreach; 2) media promotion; and 3) commercial and industrial training and outreach. The overarching objective of the EEA program is to educate the Arkansas customer base on energy efficiency and provide information on utility programs for which they may be eligible.

According to those interviewed, there are no planned or anticipated changes to the EEA programs for the upcoming program year (PY 2019). Additional information related to the design of each the components is presented in Chapters 5, 6, and 7.

#### 4.2 Program Goals

There are no energy savings or demand reduction goals for the EEA Program. The goals associated with each program component are related to the number of yearly events and trainings. Table 4-1 summarizes the achievement of these goals. Additional information on the program goals and objectives is presented in Chapters 5, 6, and 7.

| Program Component  | Goal              | Goal Achievement   | Percent<br>Achieved |
|--|-------------------|--------------------|---------------------|
| Residential Education and Outreach                           | Attend 40 events  | Attended 45 events | 112%                |
| Commercial and Industrial Education and Information Outreach | Hold 21 trainings | Held 22 trainings  | 105%                |

Table 4-1: 2016 Numeric Goal Achievement

Staff identified the following challenges in the administration and delivery of the EEA Program:

- State procurement and ensuring appropriate use of public funds;
- Engaging contractors in the program;
- Low attendance among some trainings
- Ensuring adequate communication with utility; and

Procurement processes are rigid and processing of approvals can take an extended time.

#### 4.3 Program Staffing, Roles, and Responsibilities

Staff indicated that they had limited staffing resources to support outreach efforts in 2016. However, this situation has subsequently improved somewhat since the program transitioned to a new department that provides for additional internal resources to assist with the program (e.g., communication team who can assist with press releases and coordinate hosting facilities). Nevertheless, one challenge that remains is the staff is unable to attend multiple events if they are held at the same time.

The following summarizes program staff member roles:

- The EEA facilitator's responsibilities include grassroots outreach, identifying events for exhibit booths, providing educational materials (e.g., EEA Fact Sheets, 30 Simple Things Booklet), engaging and educating people during outreach, delivering presentations to various organizations, and informing customers about energy efficiency programs available through their local utility.
- The EEA outreach and training manager's role is to provide EEA program oversight. Responsibilities include day to day operations, reporting, and coordinating the C&I training.
- The EEA associate director's role includes EEA program oversight.

The utility stakeholders' role in the program is to ensure the deliverables outlined in the Memorandum of Understanding (MOU) are completed and provide continuous input regarding the EEA programs. No stakeholders indicated they had specific responsibilities associated with the programs, however, some did state they have staffed events and attended trainings.

## 4.4 Communication with Utility Stakeholders

Communication between utility stakeholders and EEA included participation at Parties Working Collaboratively (PWC) meetings, an annual meeting, EEA monthly newsletters, and informal communication via phone and email. Newsletters that are sent to utility stakeholders and included a topical story, recent and upcoming events and trainings (with attendance numbers), and brochures detailing upcoming courses.

Utility stakeholders occasionally participated in community outreach events with EEA program staff.

Both EEA program staff and the utility stakeholders indicated there is an opportunity to improve communication by increasing the frequency of communications to monthly or bi-monthly conference calls.

Utility stakeholders indicated they would like to increase communication with EEA program staff either through additional in-person meetings or more frequent conference calls. There was not a specific number of additional meetings suggested but just to overall increase the level of communication between program staff and utility stakeholders. One utility stakeholder noted that communication was not sufficient in 2016 but that it has improved in recent years.

"I would like to have at least two in-person meetings a year. When I go to these meetings, I meet new people. They send out a weekly bulletin, but you don't see what they are planning for the future. Would like communication about their upcoming activities. Quarterly update call or newsletter." – Utility Stakeholder

#### 4.5 Data Management

As discussed below, the program meets the Arkansas Technical Reference Manual Protocol A: Program Tracking and Database requirements. Additionally, staff believes that they collected all the data needed to effectively monitor the program. That said, staff did identify the following key opportunities to enhance data collection:

- Develop a means to follow-up with contacts referred to utility programs to determine if they subsequently enroll in the program;
- Administer course evaluations for all C&I Training courses offered. Currently, course evaluations are not administered for all EEA-led trainings; and
- Develop a data collection system with reporting accessible to utility stakeholders.

Additional details on data collection is discussed below.

#### 4.5.1 Residential and Media Promotion Data

The data elements of Protocol A Program Tracking and Database Development that are applicable to the residential component of the EEA Program are:

- Participant contact information;
- Information on community events/outreach activities;
- Information on other media activities estimated impressions via mailings television/radio, print ads; and
- Program costs.

The residential and media promotion program data collection meets these requirements, although some contact information was missing in the records of recipients of tip sheets provided by program staff.

The program maintains records of:

- Name of event attended;
- Event contact information;
- Location of event;
- Number and type of materials provided at event;
- Event attendance;

- How much material was handed out at the event:
- Attendance numbers:
- Calls for tip kits;
- Website analytics (e.g., unique visitors);
- Print advertisement placements;
- Any contact from realtors; and
- Information on who picked up materials.

Additionally, costs are filed in the AEO's annual report.

#### 4.5.2 Commercial and Industrial Data

The data elements of Protocol A Program Tracking and Database Development that are applicable to the C&I component of the EEA Program are:

- Participant contact information;
- Information on community events/outreach activities; and
- Program costs.

Data tracked for the C&I program include:

- Occupation of attendees;
- Contact information;
- If they attended a class previously; and
- Training survey results.

Costs are filed in the AEO's annual report.

Although data collection meets the requirements of Protocol A, staff identified collecting better data on training feedback as area for future improvement.

"I would like us to figure out how to get better feedback on the trainings, better understand the feedback. We rely on qualitative feedback. It is not as coordinated as I would like it to be. I would like more consistent feedback to ensure these programs are as impactful as we think they are." – EEA Program Staff

#### 4.6 QA/QC Procedures

Staff indicated there were no formal quality assurance and/or control procedures (QA/QC) for the EEA programs. That said, staff does engage in some QA/QC procedures such as completion of some training evaluations and maintenance of an inventory of print materials. The development of a QA/QC plan that included the following would align the program more closely with program

#### management best practice:

- Consistent evaluations of training program offerings;
- Procedures for reviewing website functioning (e.g., verifying website links, etc.);
- Procedures for reviewing newsletters distributed;
- Procedures for reviewing informational materials generated; and
- Procedures for confirming receipt of informational procedures distribute through the program.

## 5 Residential Education and Information Outreach

This chapter presents the findings of the process evaluation of the Residential Education and Information Outreach component of the EEA Program. The chapter presents information on the program design and goals, outreach activities, a review of the educational materials provided through this component and a review of activities completed as reported by program staff.

#### 5.1 Design and Goals

Program staff characterized the Residential Education and Informational Outreach component as a grassroots effort to educate and engage Arkansas rate-payers. The intent of the distribution of energy efficiency information is to provide information on steps Arkansas residents can take to encourage energy saving behaviors. While the information provided may mostly impact residents with an extant interest in saving energy, it may motivate less interested residents by providing an introduction to energy saving actions prioritized by ease and cost if they receive the information.

This program component is comprised of the following four activities:

- Updating and reproducing fact sheets;
- Reproducing and co-branding publications;
- Distribution of information via requests and outreach; and
- Providing the Residential Energy Codes Training/Energy Star Homes Seminar.

Due to budget constraints and the major departmental reorganization previously discussed, the activities outlined above were limited in PY2016. Program staff reported that no significant updating or co-branding of publications occurred in PY2016. Additionally, residential training was not offered in 2016. Thus, the primary Residential Education and Informational Outreach component was the distribution of energy efficiency information as requested and at events.

Program staff stated that the PY2016 goal was to attend more than 40 high-volume events around Arkansas at which they would provide customers materials and information about utility-led incentive and rebate programs and indicated that approximately 45 such events were attended. Although the program met its event-attendance goal, program staff stated that engaging hard-to-reach customers, defined as those who live in rural communities, are not aware of ways to save energy, or lack interest in saving energy. The outreach activities are described in greater detail in Section 5.2.

## 5.2 Summary of Outreach and Education Distribution Activities

Across 42 statewide events, over 11,059 EEA informational packets were distributed in 2016 (see Table 5-1)<sup>1</sup>. At these events the public can stop by the EEA booth to learn about energy efficiency

ADM Associates 19

\_

<sup>&</sup>lt;sup>1</sup> EEA 2016 Annual Report. Arkansas Energy Office. http://www.apscservices.info/EEInfo/EEReports/EEA%202016.pdf (accessed 09JUL2018)

techniques from the EEA facilitator and utility representatives.

Table 5-1: Outreach Events PY2016 - Locations and Frequency

| County     | No. of Events<br>Attended | No. of Handout<br>Packets | Percent of Handout<br>Packets Distributed |
|------------|---------------------------|---------------------------|---|
| Benton     | 3                         | 595                       | 5%  |
| Clay       | 1                         | 30                        | 0%  |
| Craighead  | 3                         | 771                       | 7%  |
| Crittenden | 1                         | 60                        | 1%  |
| Desha      | 2                         | 70                        | 1%  |
| Faulkner   | 2                         | 573                       | 5%  |
| Garland    | 2                         | 618                       | 6%  |
| Jefferson  | 1                         | 314                       | 3%  |
| Logan      | 1                         | 200                       | 2%  |
| Lonoke     | 1                         | 40                        | 0%  |
| Pope       | 2                         | 440                       | 4%  |
| Pulaski    | 12                        | 4,888                     | 44%                                       |
| Saline     | 2                         | 472                       | 4%  |
| Sebastian  | 4                         | 639                       | 6%  |
| Union      | 2                         | 367                       | 3%  |
| Washington | 3                         | 982                       | 9%  |
| Total      | 42                        | 11,059                    | 100%                                      |

Visitors to the booth are encouraged to provide their contact information on sign-in sheets and indicate their utility providers, whether they would like to receive rebate/incentive information, whether they would like additional EEA information, and if they are aware of EEA or Tighten Up Programs. Staff indicated there is limited follow-up after residential customers are provided education materials at the various events they attend as part of their outreach efforts but those who are interested in EEA information were sent the monthly partner newsletter. Additionally, while contacted information for those interested in utility rebates is passed along to the appropriate utility within a month of the event, there is not any follow-up to determine if the customer was contacted by the utility.

The scope of 2016 outreach is provided in Table 5-2. Each handout packet contained the following materials:

- Heating Fact Sheet
- Lighting & Appliances Fact Sheet
- Water Heating Fact Sheet
- Cooling Fact Sheet
- Locating and Sealing Air Leaks Fact Sheet
- Home Energy Projects: An Energy Conservation Guide for Do-It-Yourselfers

#### 30 Simple Things You Can do to Save Energy & Money

The events were categorized based on the type of event and displayed by descending number of educational packets distributed.

Table 5-2: Outreach Events by Number and Packets Distributed

| Event Type                  | No. of Events<br>Attended | No. of<br>Handout<br>Packets | Percent of<br>Handout Packets<br>Distributed |
|-----------------------------|---------------------------|------------------------------|--|
| Home Show                   | 6                         | 2,094                        | 18.9%  |
| State Fair                  | 1                         | 1,920                        | 17.4%  |
| Health Fair                 | 8                         | 1,674                        | 15.1%  |
| Earth Day                   | 1                         | 1,120                        | 10.1%  |
| Business Expo               | 2                         | 540                          | 4.9%   |
| Women's Expo                | 2                         | 538                          | 4.9%   |
| MLK Events                  | 1                         | 500                          | 4.5%   |
| Outdoor Expo                | 2                         | 442                          | 4.0%   |
| Business Women's Conference | 1                         | 400                          | 3.6%   |
| Spring in Saline            | 1                         | 372                          | 3.4%   |
| Oil Assoc Trade Show        | 1                         | 240                          | 2.2%   |
| Realtor Convention          | 1                         | 226                          | 2.0%   |
| Festival                    | 2                         | 200                          | 1.8%   |
| Frontier Days               | 1                         | 200                          | 1.8%   |
| Sustainability Summit       | 2                         | 162                          | 1.5%   |
| Rotary Club                 | 2                         | 100                          | 0.9%   |
| Rural Dev Conference        | 1                         | 55                           | 0.5%   |
| Home Builders               | 1                         | 51                           | 0.5%   |
| AAEA Conference             | 1                         | 50                           | 0.5%   |
| Senior Citizen Lunch        | 1                         | 50                           | 0.5%   |
| 4H Club                     | 1                         | 40                           | 0.4%   |
| Chamber of Commerce         | 1                         | 30                           | 0.3%   |
| Presentation                | 1                         | 30                           | 0.3%   |
| High School                 | 1                         | 25                           | 0.2%   |
| Total                       | 42                        | 11,059                       | 100%   |

In addition to distributions at events, tip kits, which include all paper-based fact sheets and booklets, were sent to 15 persons who called EEA's toll-free number and requested between 1 and 448 tip kits.

These individuals, often requesting materials on behalf of an organization, were sent a total of 1,854 tip kits. Partial contact information was provided for those who received tip kits. Six were related to real estate, two were from electric coops, another two were with an energy efficiency implementer, one from a community action group, and another with a sustainability summit.

Seasonal mailings of fact sheets did not occur.

#### 5.3 Residential Publications

Table 5-3 summarizes the residential publications provide through the program.

Table 5-3: Summary of Residential Publications

| Publication  | Description   | Available<br>on<br>Website |
|--|---|----------------------------|
| Fact sheets  | Two page flyers. Fact sheets are provided on these topics: Air leaks, cooling, heating, lighting and appliances, and water heating.   | Yes                        |
| Home Energy Projects   | A thorough 88-page booklet (2008 edition) available on the EEA website. Energy efficient actions are prioritized by urgency/cost and detailed illustrations guide DIY updates and replacements.   | Yes                        |
| 30 Simple Things You<br>Can do to Save<br>Energy & Money<br>(2017 edition) | A 96-book with high quality production. It covers many topics from lawn maintenance, transportation, tree planting, and home energy efficiency. Included is a section geared towards children and a 'contract with the earth' one can complete with commitments to take energy efficient actions. | No                         |
| The Complete Guide<br>to Saving Energy in<br>the Home (2017<br>edition)    | g Energy in systems, and lighting types. The 98-page booklet  |                            |
| Tips for Energy<br>Savers  | A compact pamphlet (12 pages) covering cooling, heating, appliance, water, lighting and insulation tips and action items. Its second half is a home self-audit walk-though with space to enter notes as one checks for energy-related leaks and concerns around the house                         | No                         |

The key findings regarding the publications are:

- One stakeholder believed there is short- and long-term behavior change in customers who engage with the materials. However, a few stakeholders did indicate the resources may only be relevant to those already interested in energy efficiency improvements. Given the length of some of the materials, it is likely that only those already interested in efficiency would review the material in detail. As such, the educational resources may not be as effective for hard-to-reach residents who are not already interested in energy efficiency.
- The style of the fact sheets is uniform and colorful. A first impression is that they are somewhat text-heavy as opposed to a balance of white space and graphics. The action items are nicely categorized by cost burden but may also benefit from less text for easier comprehension (see Figure 5-1).

- According to program staff, the fact sheets were created prior to 2016 and have had only minor updates. Program staff and some stakeholders believed the fact sheets and other resources to be valuable to customers. One stakeholder believed the fact sheets are valuable but also noted his/her utility has similar fact sheets.
- Stakeholders also wanted to see updates to the fact sheets and the no and low-cost tips.
   Suggestions included adding information about new technologies (e.g., lighting and smart thermostats) and include more information about the benefits of energy efficiency.
- The website fact sheet versions are static and do not provide interactive links that could guide a visitor to relevant information on rebates/incentives and additional details. For instance, the Window Putty tip in the Locating and Sealing Air Leaks fact sheet could link to an instructional video or webpage to impart education.

Figure 5-1: Fact Sheet Example

# energy efficiency facts LOCATING & SEALING AIR LEAKS

According to the Environmental Protection Agency, 25 to 40 percent of the energy used for heating and cooling a typical home is lost due to air leakage. Warm air leaking into your home during the summer and out of your home during the winter can waste a lot of energy dollars. That's why tightening up your home is the first step you should take in cutting your energy costs. A modest investment in time and effort can pay real dividends when it comes to reducing energy costs. Experts say a \$25 investment in caulking and weatherstripping could result in hundreds of dollars of energy savings every year.

How does air escape? Air leaks in and out of your home through every hole, nock and cranny. Common leakage sites include: plumbing holes through walls, floors and ceilings; around chimneys; fireplace dampers; attic access hatches; recessed lights and fans; wiring holes; missing plaster; electrical outlets and switches; moldings around windows, doors and baseboards; and dropped ceilings above bathtubs and kitchen cabinets (see figure 1).

Typical Air Leakage Locations

Fans & Vents 2% Electric Outlets

Windows

10%

10%

Floor, Walls & Ceiling

11%

Plumbing Holes — 14%

Ducts

Fireplace

Source: U.S. Department of Energy, ENERGY SAIVERS,
Tips on saving Energy & Money at Home

#### Getting started

Repair all obvious sources of air leakage first, such as broken windows and holes where air can enter through the ceiling, walls or floor. Check anywhere building materials join and look for daylight that is visible through the cracks. After these have been properly sealed, you will be ready to tighten up other less obvious air leakage areas.

#### Caulking vs. Weatherstripping

Caulking is used between non-moving parts where the gap is less than ½-inch wide (e.g. between window frame and wall). Apply caulk on a clean dry surface after removing any old caulk and paint — the best time to caulk is during dry weather when the temperature is above 45 °F. Weatherstripping comes in cleverly designed strips of felt, rubber, metal or plastic that fills the spaces

#### Myths and Facts

Myth: A house can be too air-tight.

Fact: It's almost impossible to make a home too tight, especially an older home. If your home feels stul

especially an older home. If your home feels stuffy or there is condensation forming on your windows, it is probably the result of inadequate ventilation—make sure that kitchen and bathrooms have good exhaust ventilation (recommended to the outside and not into an attic or crawlspace).

Note: If you are heating with an unvented gas or kerosene heater, it is necessary to crack open a nearby window to allow moisture and exhaust gases to escape and fresh air to enter.

Myth: Windows are the largest source of air leakage in the home.

Fact: Only about 10 percent of a home's air leakage is through windows (see figure 1). The majority of air leakage in older homes is through the floor and ceiling and these areas are the first priority. However, if your windows are beyond repair or are beginning to rot, consider replacing them with newer, more efficient ones. If your windows are still in good working order, then storm windows are a

more cost-effective option.



around doors, windows and attic hatches — it compresses and seals when they are shut. There are a variety of weatherstripping materials available from your local hardware store.

#### No Cost

- Identify and prioritize where leakage might be taking place

   air leakage locations are not always obvious and easy to find
   (see figure 1). Prioritize your air sealing strategy by identifying
   the biggest leaks first. On a windy day, locate leaks by running
   your hands near those leakage sites mentioned in figure 1.
- Lock your windows to make sure they are shut. Locking a window helps create an air-tight seal.
- Keep the fireplace damper closed when the fireplace is not in use. Even when the damper is closed it is still leaking air and taking your money up the chimney. In a well insulated home, an open damper can raise heating and cooling energy consumption by 30 percent. An inadequately sealed fireplace is one of the worst sources of air leakage in the home. According to the Department of Energy, sealing and weatherstripping the fireplace in a typical home can reduce air leakage by 14 percent or more. If you're not using your fireplace, seal it up.

#### Low Cost

- Window putty (glazing compound) is used to seal a loose windowpane.
- Select the best product to do the job. Ask your local hardware store attendant for the best sealing product for your project. Discuss the location, surface type, size of leak, etc.
- Seal the leaks. The best and most effective place to seal
  a home is on the inside. This not only prevents air movement,
  it also prevents moisture from accumulating in the wall and
  ceiling cavities.
- Caulk the leaks in your ceiling. Typical insulation does
  not stop air leakage. When you're up in the attic, look for dirty
  spots in the insulation. This often indicates a hole where air
  leaks into and out of your house. Caulk areas where air might
  escape from such places as ceiling light fixtures, wiring and
  plumbing holes in the kitchen and bath, electrical junction
  boxes and recessed light fixtures.
- A foam backer rod is used to fill large or deep cracks; then this is covered and sealed with caulk.

- Rope caulk can be used to air seal many leaky areas around
  the home especially windows. This inexpensive material is
  very easy to apply and later, if you want to open the window,
  it's easy to remove. Note: always designate one window in
  each room as the fire escape and make sure that it is operable.
- An attic hatch or pull-down stairway in the heated and cooled part of your home needs to be weatherstripped and insulated.
- Electrical outlet cover gaskets reduce air leakage through electrical outlets. Although the savings is small (about two percent of heating and cooling costs) the cost is also low and it is an easy do-it-yourself project.
- Window pulley seals are inexpensive and easy to install.
   Many older double-hung windows have a rope and weight system to make it easier to raise and lower the window. The peal-and-stick pulley seal stops air leakage at this location while allowing the window to continue to function.

#### Investment

• The duct system in a typical home loses about 20 percent of the air that moves through it due to leaks and poorly sealed connections. This results in higher utility bills and an uncomfortable home. Observe the condition of your ducts; particularly how they are sealed; if uninsulated, check for gaps or air escaping at the joints. If the ducts are insulated, make sure the insulation is vapor sealed and securely taped. Consult a duct-sealing contractor and make sure that mastic or UL-approved duct sealing tape is being used (common "duct tape" does not hold up on ducts and should not be used). Also ensure that the ducts are insulated with R-5 duct insulation (Arkansas Energy Code) and carefully vapor sealed. Duct tape is not approved by State Code for duct sealing.

This Fact Sheet was developed for Energy Efficiency
Arkansas (EEA), a partnership between the Arkansas Energy
Office and Arkansas's investor-owned electric and gas
utilities and electric cooperatives, to provide Arkansans with
unbiased information about cost effective energy efficient
practices, improvements and technologies. For further
information go to <a href="https://www.EnergyEfficiencyArkansas.org">www.EnergyEfficiencyArkansas.org</a>.

recycled paper & soy ink

## 6 Media Promotion

This chapter presents the findings of the process evaluation of the Media Promotion component of the EEA Program. The chapter presents information on the program design and goals, media activities, and results of a general population survey intended to gather feedback on users experience with the website and to assess awareness of utility rebates, the level of understanding of efficiency opportunities, and the types of efficiency actions being taken and those not being taken by residents.

#### 6.1 Design and Goals

The purpose of EEA Media Promotion is to make consumers aware of energy saving opportunities, motivate individuals to reduce energy consumption, provide information on cost-effective energy efficiency measures, and inform the public how and where to get additional energy information with the ultimate goal of changing individual or collective behavior. Information that helps raise awareness and educate the consumer is an integral part of this initiative.

The Third Amended MOU outlines two primary activities to be carried out under the media promotion component:

- Mass media promotion including radio, television, and print advertisement.
- Maintain a fuel neutral website that:
  - Links to the utility website and provides information on utility program incentives;
  - Identify trained contractors;
  - Provide a more comprehensive list of EEA trainings and related events.

The media budget for 2016 was \$100,000, an amount that was \$20,000 (16.7%) less than the annual budgets outlined in the Third Amended MOU.<sup>2</sup>

A third-party market company assisted with the Media Promotion component in 2016 because the agency that EEA was in did not have a dedicated communications department.

There was variation in opinions among staff whether awareness of the EEA programs had increased among Arkansas customers. One program staff member believed there was additional awareness of the EEA programs due, in part, to the number of outreach events that were attended that year, while another staff member did not believe there was an increase in awareness from previous years. As discussed below, a finding of the general population survey is that

<sup>&</sup>lt;sup>2</sup> The Third Amended MOU provides for a budget of \$100,000 for mass media promotion, and \$20,000 for the maintenance of the website.

approximately 30% of respondents were either "Somewhat familiar" or "Very familiar" with the EEA Program. This level of awareness is consistent with the finding of the 2013 evaluation which reported that 28% of survey respondents were aware of the EEA Program or the "Tighten Up" campaign.<sup>3</sup>

One utility stakeholder did not believe the current marketing was reaching their customer base.

"When we had the larger budget, we could do the paid media. We felt we had a broader reach. The last evaluator recommended broadening the campaign because they noted the smaller reach. In terms of improvement – if we had some paid media we could have a broader reach to our residential customers and potentially some C&I. Even print ads would help expanding our reach to industry." – EEA Program Staff

#### 6.2 Mass Media

Program staff reported that the previously mentioned media budget reduction has curtailed activities and driven the program to seek no and low-cost media opportunities. Specifically, the program did not engage in radio or television advertisement but did purchase print advertisements. In 2016, EEA purchased print advertisement in several publications such Arkansas Democrat-Gazette Living Green, Earth Day Section, and Home Show.

#### 6.3 Fuel Neutral Website

#### 6.3.1 Website Design and Content

A third-party marketing company, in collaboration with program staff, revamped and updated the EEA website (http://www.energyefficiencyarkansas.org/) in 2015. The third party's efforts were viewed with mixed results by program staff. The goals of the redesigned website were to<sup>4</sup>:

- Provide links to the utility website and provides information on utility program incentives;
- Identify trained contractors; and
- Provide a more comprehensive list of EEA trainings and related events.

Since EEA has moved to ADEQ, the internal IT department helps program staff to make updates to the website and it was noted they are responsive to requests.

The Evaluators' reviewed the website as structured in 2018. That review identified the following main components and resources available on the website:

- A search tool for utility incentive and rebate programs;
- The "Tighten Up Challenge" link;

<sup>&</sup>lt;sup>3</sup> Cadmus (2013). Energy Efficiency Arkansas Program Evaluation.

<sup>&</sup>lt;sup>4</sup> Third Amended MOU

- Tips for energy efficiency;
- Five topical fact sheets (Air Leaks, Cooling, Heating, Lighting & Appliances, and Water Heating); and
- "Home Energy Projects" booklet;
- Do-It-Yourself (DIY) topical videos (Attic Insulation, Appliance Use, Cooling, Heating, HVAC Replacement, and Water Heating) linked to YouTube which were posted in 2012 and have less than 200 views each;
- Energy calculator that is linked to an external Department of Energy site;
- A calendar of upcoming training and events; and
- Description of the programs with contact information.

# 6.3.2 Consistency of Website Content with Objectives Outlined in the Third Amended MOU

The website design was consistent with two of the three objectives outlined in the Third Amended MOU:

- The website provides information on utility program incentives through a search feature. Users can search for incentives by utility, city, county or zip code for eligible programs.
- The website provides information on EEA trainings and relative events. This information is provided through a training calendar and links to training events with flyers that provide information on training date, time, and location; course learning objectives and content; cost of the course; and information on the instructor.

The Third Amended MOU states that a third objective of the website is to provide information on trained contractors. The website does not appear to provide this information.

## 6.3.3 Website Appearance and Navigability/Usability

In terms of overall appearance, the format is bold, easily read, and allows for a good amount of white space. The color scheme and branding are appealing.

In general, the website is readily navigable. However, a few issues with website discovered through a review and use of it:

- A review of the website found that the program is not fully aligned with federal guidelines designed to ensure access to website and other technology for people with physical, sensory, or cognitive disabilities.<sup>5</sup>
- No confirmation email was received once an email was entered to be informed of future events.
- The training calendar provides brochures that display URLs for online registration, but the links are static and cannot be accessed.
- Upon linking to the Residential or C&I webpage, the tool to search for efficiency rebates fills most of the screen and almost no information about the other resources (publications, videos, and training schedule) listed on the site is in view.
- Once one enters their geographic information, he or she is connected with the local utility and may not view the educational material on the second half of the EEA webpages.
- Some search results for incentives/rebates did not always yield a current web link result that referenced the appropriate utility program page.

#### 6.3.4 Website User Feedback

Although a limited number of survey respondents reported that they had accessed the website, those that did found it informative and easy to navigate.

- Twelve of the residents surveyed (6%) had visited the Energy Efficiency Arkansas website. Of those, 58% (n=7) had visited in the last six months and an additional four people had visited between six months and one year ago.
- Respondents most frequently reported reasons for visiting the website were to learn more about rebates and incentives (27%) and to learn more about EEA (27%) (see Table 6-1). The aspect of the website that respondents most frequently reported as most useful were the fact sheets (27%) (see Table 6-2).
- Most respondents reported that the information on the website met their needs. Eighty-four percent of the website users indicated that the website information met their needs (i.e., rated how well the website met their needs as a 4 or 5) and none indicated that the information did not meet their needs (i.e., rated how well the website met their needs as 1 or 2) (see Figure 6-1).

ADM Associates 29

\_

<sup>&</sup>lt;sup>5</sup> The guidelines are outlined in Section 508 of <u>The Rehabilitation Act</u> that protects the right of people with disabilities to have equal access to electronic and information technology. Although the act only applies to information technology procured by the federal governments, the standards can be more broadly applied to assess the accessibility of information technologies. <a href="https://www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-section-508-standards/guide-to-the-section-508-standards/">https://www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-section-508-standards/</a>

■ The navigability was also favorably rated by website users. Seventy-five percent of users reported that that website was easy to navigate (i.e., rated it as 4 or 5), and none rated it as difficult to navigate (i.e., rated it as 1 or 2) (see Figure 6-2).

Table 6-1: Reason for Visiting Website

| Reason Given                                 | Percent of Respondents (n = 11) |
|--|---------------------------------|
| Incentives/rebates information               | 27%                             |
| Learn more about the program/website content | 27%                             |
| Fact sheets about how to save energy         | 9%                              |
| Other  | 9%                              |
| Don't know                                   | 27%                             |

Table 6-2: Most Useful Aspects of Website

| Website Aspect                                   | Percent of Respondents (n = 11) |
|--|---------------------------------|
| Fact sheets about how to save energy             | 27%                             |
| Incentives/rebates information                   | 9%                              |
| Everything was useful                            | 9%                              |
| Information about the energy efficiency programs | 9%                              |
| Learning ways to save electricity                | 9%                              |
| No purpose – Followed email link                 | 9%                              |
| Don't know                                       | 27%                             |

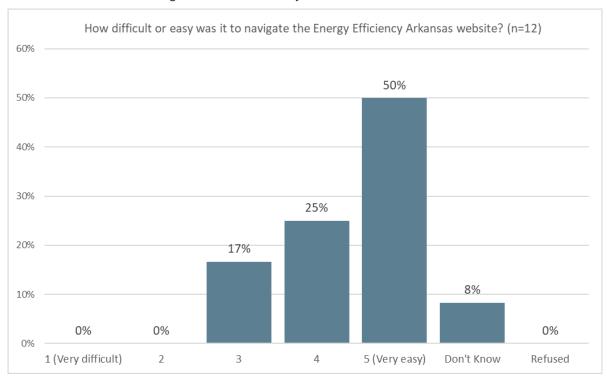
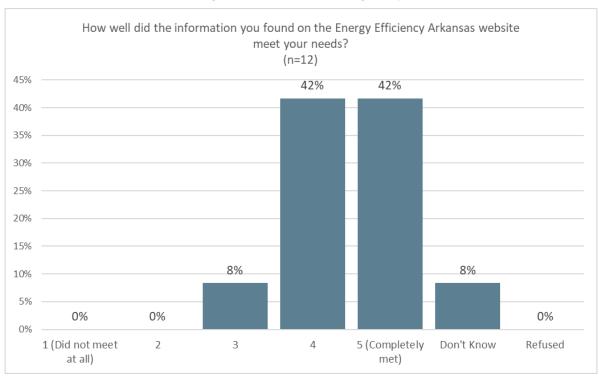


Figure 6-1: Sufficiency of Website Information





#### 6.4 Website Use

Table 6-3 presents the 2016 website analytics as provided in the 2016 Annual Energy Efficiency Program Report submitted by the AEO. As shown, website traffic in 2016 was limited to 231 users, of which, 82% were new visitors to the website.

Table 6-3: 2016 Website Analytics

| Metric                       | Statistic |
|------------------------------|-----------|
| Number of Users              | 231       |
| Percent new visitors         | 82%       |
| Percent returning visitors   | 15%       |
| Number of Sessions           | 269       |
| Average Number of Page Views | 2.09      |
| Average Session Duration     | 2:24      |

#### 6.5 Social Media

Although it is not defined as Media Promotion activity under the Third Amended MOU, the EEA program utilizes a Twitter account (@EnrgyEffcnyAR) and Facebook page (https://www.facebook.com/EnergyEffciencyAR/) which are linked from their website.

The EEA Program does not appear to be actively using these social media platforms:

- As of July 2018, the last Twitter post was dated September 2011 and the most recent Facebook post was dated February 2017.
- The EEA Facebook account has 151 follows and the twitter account has 78.
- The Facebook page link "Tighten Up Challenge" is not currently functioning.
- The "Videos" link on the Facebook page does not currently contain the varied videos available on the EEA website.

Program staff indicated they would be working with the internal communications department to begin more regular social media postings.

## 6.6 Resident Efficiency Knowledge and Awareness

#### 6.6.1 Resident Awareness of EEA Program

Figure 6-3 shows that a finding of the general population survey is that approximately 30% of respondents were either "Somewhat familiar" or "Very familiar" with the EEA Program. This level of awareness is consistent with the finding of the 2013 evaluation which reported that 28% of

survey respondents were aware of the EEA Program or the "Tighten Up" campaign.<sup>6</sup> While on the one hand this level of awareness suggests that a fair share of Arkansas residents appear to have some familiarity with the program, the finding also suggests there is continued opportunity to increase awareness among residents.

Thirty respondents (15%) cited familiarity with one or more EEA outreach activities or materials. The fact sheets and the program website were the aspects of the program the program outreach activities that respondents most frequently reported being aware of (see

Table 6-4).

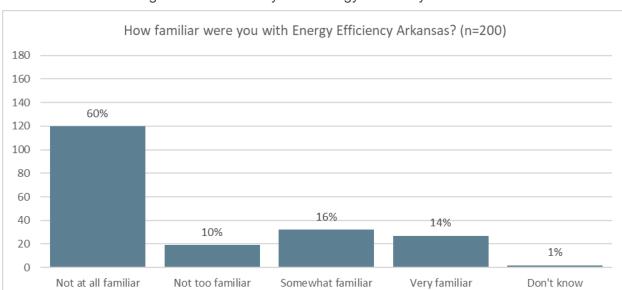


Figure 6-3: Familiarity with Energy Efficiency Arkansas

<sup>&</sup>lt;sup>6</sup> Cadmus (2013). Energy Efficiency Arkansas Program Evaluation.

Table 6-4: Familiarity with EEA Outreach Methods

| Outreach Method  | Percent of<br>Respondents<br>(n = 30) |  |
|--|---------------------------------------|--|
| Fact sheets  | 33%                                   |  |
| Energy Efficiency Arkansas website   | 23%                                   |  |
| Home shows   | 17%                                   |  |
| News story   | 13%                                   |  |
| How-to videos  | 13%                                   |  |
| Trainings  | 10%                                   |  |
| Mailings   | 7%                                    |  |
| Community events / fairs   | 3%                                    |  |
| Word of mouth  | 3%                                    |  |
| Email  | 3%                                    |  |
| Internet/Website   | 3%                                    |  |
| Note: The total count exceeds the respondent number as participants were able to give several answers. |                                       |  |

#### 6.6.2 Awareness of Utility Rebates

The following points summarize the key findings regarding awareness and use of utility rebates. As discussed, awareness levels are moderately high, but use of them lags. The findings suggest that continued promotion of utility rebates with Arkansas residents would be of value.

- Thirty percent (n=59) of the survey respondents were aware of utility sponsored energy efficiency rebates and 8% (n=16) reported that they received a utility rebate for installing energy efficient equipment or making energy efficiency improvements in the last five years (Figure 6-4).
- Heating and cooling equipment rebates were the most frequently recalled types of rebates (see Table 6-5).
- Appliance rebates were the most of commonly reported type of rebate received (see Table 6-6).
- One respondent reported that they learned of the rebates through the EEA website.

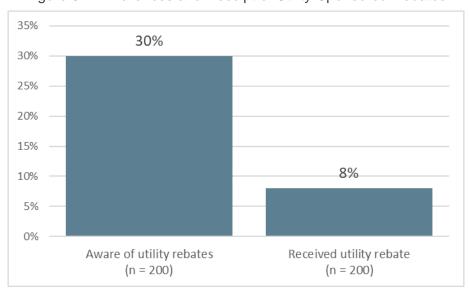


Figure 6-4: Awareness and Receipt of Utility-Sponsored Rebates

Table 6-5: Recalled Hearing about Types of Rebates

| Remembered Types of Rebates  | Percent of<br>Respondents<br>(n = 58) |  |
|--|---------------------------------------|--|
| Heating and cooling equipment  | 34%                                   |  |
| Appliances such as refrigerators, clothes washers  | 14%                                   |  |
| Home weatherization improvements such as air or duct sealing   | 12%                                   |  |
| Discounts for efficient lighting   | 12%                                   |  |
| Low flow faucet aerators or showerheads  | 7%                                    |  |
| Building envelope (windows/insulation)   | 2%                                    |  |
| Solar  | 2%                                    |  |
| Water heater   | 2%                                    |  |
| Audits   | 2%                                    |  |
| Don't know   | 31%                                   |  |
| Note: The total percent of respondents exceeds 100% because respondents were able to provide multiple responses. |                                       |  |

Appliance rebates were the most of commonly reported type of rebate received (see Table 6-6).

Table 6-6: Types of Utility Rebates Received

| Types of Equipment/Improvements with Utility Rebate                                       | Percent of<br>Respondents<br>(n = 16) |
|---|---------------------------------------|
| Appliances such as refrigerators, clothes washers   | 25%                                   |
| Heating and cooling equipment   | 19%                                   |
| Home weatherization improvements such as air or duct sealing                              | 19%                                   |
| Tankless water heater   | 6%                                    |
| Incentive to let utility reduce power at peak hours                                       | 6%                                    |
| Home energy audit   | 6%                                    |
| Home energy program   | 6%                                    |
| Don't know  | 19%                                   |
| Note: The total count exceeds the respondent number as participants were able to answers. | give several                          |

## 6.6.3 Energy Efficiency Knowledge and Perceived Efforts

Survey respondent self-assessed knowledge of energy efficiency and their efforts made to improve energy efficiency suggest that there is continued opportunity to educate Arkansas residents on energy efficiency measures and benefits.

- Thirty-five percent of respondents rated their level of knowledge of ways to save energy as a 4 or a 5 on a scale where 5 meant "Very knowledgeable." This suggests that there are additional opportunities to increase resident's knowledge of energy efficiency (see Figure 6-5).
- Respondents rating of perceived efforts to make efficiency improvements were similar with 41% rating their effort as a 4 or 5 on a scale where 5 meant they had "Done almost everything" to improve their energy efficiency and 1 meant they had "Not done much" (see Figure 6-6).
- The costs of efficiency efforts cited by 14% of respondents was the most frequently cited challenge to efficiency improvements. This finding reinforces the previously mentioned conclusion that EEA's continued promotion of rebates is likely to be of value. Forty-four percent of respondents reported that they did not face any challenges (see Table 6-7).

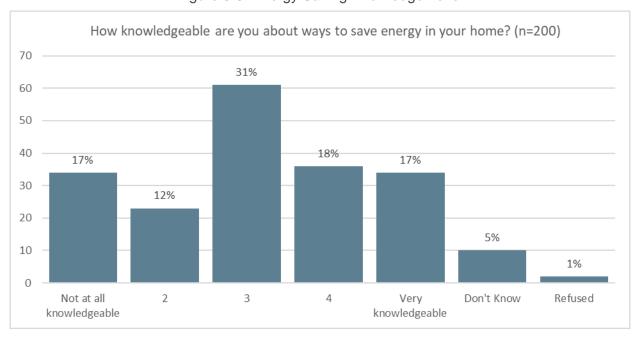


Figure 6-5: Energy Saving Knowledge Level

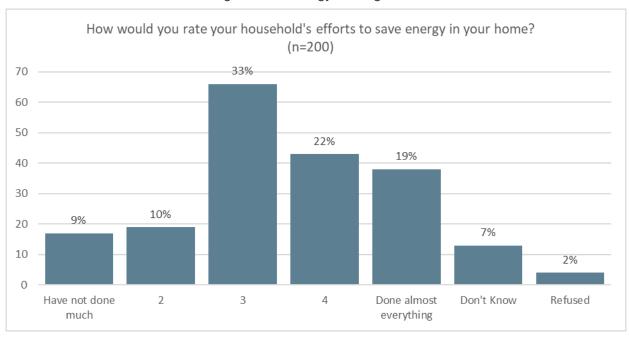


Figure 6-6: Energy Saving Effort

Table 6-7: Challenges to Saving Energy

| Saving Energy Challenge                          | Percent of Respondents (n = 183) |
|--|----------------------------------|
| No challenges                                    | 44%                              |
| Too expensive                                    | 14%                              |
| Home is already efficient                        | 5%                               |
| Unsure of what would make home more efficient    | 4%                               |
| Landlord makes those decisions                   | 4%                               |
| Lack of cooperation from other household members | 4%                               |
| Windows/Insulation                               | 4%                               |
| Habits are difficult to change                   | 3%                               |
| Members overuse energy                           | 2%                               |
| HVAC system not efficient                        | 2%                               |
| Other  | 3%                               |
| Don't know                                       | 15%                              |
| Refused  | 1%                               |

## 6.6.4 Energy Efficiency Behaviors

Although survey respondents are engaging in energy saving behaviors, lower awareness of some relatively lower cost measures and simple energy saving behaviors suggests that there are opportunities for continued education of Arkansas residents.

 Nearly one-half of respondents (42%) reported that they had made energy efficiency improvements in the last two-years and a similar share (44%) reported that they had made

behavioral changes to save energy. Additionally, 20% of respondents reported that they planned to make an energy efficiency upgrade in the next 12 months (see Figure 6-7).

- The most commonly reported efficiency purchases made were: HVAC unit replacement (16%), refrigerator (12%), LED light bulbs (11%), and clothes washers/dryers (10%). Two types of efficiency purchases that were less frequently reported were air conditioner tuneups (2%) and smart thermostats (2%). The results for planned purchases were similar (see Table 6-8).
- The energy efficiency behavioral changes most commonly reported were turning lights off in unoccupied rooms (30%), turning up thermostats in summer to reduce air conditioner use (24%), and turning down the thermostat in the winter to reduce heating use (10%). Less frequently reported behaviors included changing the AC filter (2%), turning down the water heater set point (1%), and using cold water when washing clothes (1%) (see Table 6-9).

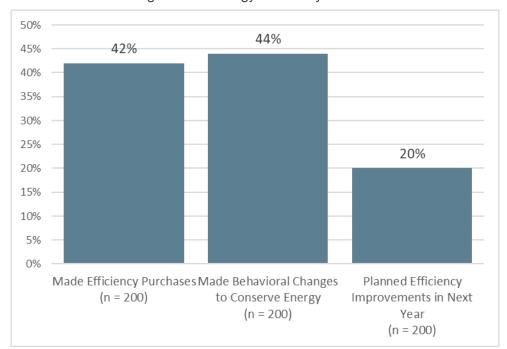


Figure 6-7: Energy Efficiency Actions

Table 6-8: Efficiency Purchases Made and Planned

| Upgrade/Purchase in Last Two Years  | Purchases<br>Made in<br>Last 2 Years<br>(n = 138) | Purchase Planned for the Next 12 Months (n = 52) |
|---|---|--|
| Replaced an air conditioner/HVAC unit (AC, heat pump, window unit) Refrigerator | 16%<br>12%  | 17%<br>2%  |

| Upgrade/Purchase in Last Two Years                                 | Purchases<br>Made in<br>Last 2 Years<br>(n = 138) | Purchase Planned for the Next 12 Months (n = 52) |
|--|---|--|
| LED bulbs  | 11%   | 12%  |
| Clothes washer   | 10%   | 2%   |
| Clothes dryer  | 10%   | 2%   |
| Insulation (attic insulation, wall insulation, floor insulation)   | 7%  | 10%  |
| Windows – double pane, triple pane, low-e windows, storm windows   | 6%  | 17%  |
| Water heater – storage tank, tankless, heat pump water heater      | 5%  | 6%   |
| Dishwasher   | 4%  | 2%   |
| Other  | 3%  | 8%   |
| Tuned-up or serviced an air conditioner/HVAC unit                  | 2%  | 0%   |
| Other fans (whole-house, attic fan, box fans, ceiling fans)        | 2%  | 2%   |
| Stove  | 2%  | 0%   |
| Smart thermostat / Wi-Fi thermostat / NEST / Ecobee                | 2%  | 2%   |
| Installed and/or replaced an evaporative cooler                    | 1%  | 0%   |
| CFLs/compact fluorescent lighting                                  | 1%  | 0%   |
| Freezer  | 1%  | 0%   |
| New roof   | 1%  | 0%   |
| Solar screens  | 1%  | 2%   |
| Solar panels / solar PV  | 0%  | 4%   |
| Pool equipment – heaters, pumps, variable speed drives or controls | 0%  | 2%   |
| Don't know   | 1%  | 12%  |

Note: The total percent of respondents exceeds 100% because respondents were able to provide multiple responses.

Table 6-9: Energy Saving Habits Changed in Last 2 Years

| rable of the largy daving habite changes in East 2 reare   |  |  |  |  |
|--|--|--|--|--|
| Habit Change   | Percent of<br>Respondents<br>(n = 125) |  |  |  |
| Turned off lights in unoccupied rooms  | 30%                                    |  |  |  |
| Turned up the thermostat in summer to reduce AC use  | 24%                                    |  |  |  |
| Turned down the thermostat in winter to reduce heating use   | 10%                                    |  |  |  |
| Unplug electronics when not in use   | 5%                                     |  |  |  |
| Increased use of fans to reduce use of AC  | 3%                                     |  |  |  |
| Changed AC filter  | 2%                                     |  |  |  |
| Clear areas around heating/cooling vents   | 2%                                     |  |  |  |
| Turn off computers overnight   | 2%                                     |  |  |  |
| Increased refrigerator/freezer temperature Used heat blocking materials on windows / shaded windows                                  | 2%                                     |  |  |  |
| during hot daytime   | 2%                                     |  |  |  |
| Run clothes washer with full load  | 2%                                     |  |  |  |
| Run dishwasher with full load  | 2%                                     |  |  |  |
| Sealed leaks and drafts  | 2%                                     |  |  |  |
| Increased use of alternative heating system (wood stove, fire place) Shifted use off-peak (e.g., avoided use of laundry/electronics/ | 2%                                     |  |  |  |
| during peak time)  | 2%                                     |  |  |  |
| Used cold water setting on clothes washer  | 1%                                     |  |  |  |
| Take shorter showers   | 1%                                     |  |  |  |
| Turned down water heater setpoint  | 1%                                     |  |  |  |
| Cleaned refrigerator coils   | 1%                                     |  |  |  |
| Other  | 4%                                     |  |  |  |
| Don't know   | 1%                                     |  |  |  |
| Note: The total percent of respondents exceeds 100% because respondents were able to   |  |  |  |  |

Note: The total percent of respondents exceeds 100% because respondents were able to provide multiple responses.

## 6.6.5 Preferred Sources of Information

Survey respondents reported a preference for receiving information in electronic format (see Table 6-10). Forty percent searched for information using internet searches, and 10% viewed the EEA website.

Table 6-10: Preferred Energy Saving Information Source

| (1) =  | ndents<br>200) |
|--|----------------|
| Internet search (e.g., Google) 40                              | %              |
| Energy Efficiency Arkansas website 10                          | %              |
| Request a packet of energy saving tips be sent to your home 89 | %              |
| Television/radio ads 69  | %              |
| Energy Efficiency Arkansas toll free telephone number 49       | %              |
| Utility 39   | %              |
| Sign up for monthly email / text from your utility 29          | %              |
| Periodicals (REA, Arkansas Energy, Scientific Journal)         | %              |
| Visit a booth at a home improvement store / community fair     | %              |
| Mail 19  | %              |
| Local experts/contractors 19                                   | %              |
| Social media (Twitter/Facebook, etc.)                          | %              |
| Energy star website and local events                           | %              |
| Other 49   | %              |
| Don't know   | %              |
| Refused 39   | %              |

Note: The total percent of respondents exceeds 100% because respondents were able to provide multiple responses.

# 7 Commercial and Industrial Education and Information Outreach

This chapter presents the findings of the process evaluation of the Commercial Education and Information Outreach component of the EEA Program. The chapter presents information on the program design and goals, training activities, results from a survey of training participants, and a summary of course evaluation data provided by AEO staff.

## 7.1 Design and Goals

The Commercial and Industrial (C&I) component of EEA is designed to provide training to state agencies and large commercial and industrial sectors. The targeted attendees include industrial customers, building managers, energy managers, commercial properties, utility program trade allies and other contractors in Arkansas. The rationale for offering this training as stated in the Third Amended MOU states that school districts and state facilities have a significant impact on the State's overall energy consumption, as well as on the energy demand experienced by the utilities and the economic stability of the communities they serve. Therefore, it is important to train employees and managers in the practices and technologies for eliminating energy waste, improving energy efficiency, and reducing costs and environmental impacts of public facilities. The C&I training also aims to connect industrial customers with the utility-sponsored incentive programs. During 2016, the program budgeted to provide 21 training courses and exceeded this target by one.

## 7.2 Training Topic Development

Program staff reported that they identify and select topics annually by examining training gaps, feedback from past attendees and contractors, and industry best practices. One program staff noted that they review training offerings from other industry associations as part of their yearly planning. EEA program staff also collaborated with utility stakeholders when selecting training topics.

"We think that partnership is extremely helpful and relevant in developing our program."

Staff stated that the training topics are alternated each year. This alternation is done to cover a breadth of topics and to ensure that they do not repeat trainings two years in a row. Staff also considers attendance as an indicator of whether there is still a need for the training.

Program staff stated one strength of the EEA programs is its responsiveness to the needs in the field and its role as a resource for industrial professionals and multiple utility stakeholders indicated that the C&I training program is a useful resource for customers.

Offering additional training on more advanced topics is an area of potential improvement for the design of the training program component. In general, program staff noted that training attendees were assumed to have a basic proficiency of energy efficiency and that the program offered limited advanced training offerings. Utility stakeholders also noted that while trainings have good content and curriculum, they would like to see more topics, advanced levels, and broader reach. One stakeholder believed it would beneficial to develop trainings that are tailored towards trade allies who focus on residential energy efficiency (e.g., certifications for residential audits) and small to

medium sized businesses.

"I can see some opportunities for small to medium sized businesses to increase their knowledge of how they can improve their efficiency." – Utility Stakeholder

"We could potentially expand our program type, I think we would be in a better position to offer programming. For example, we would like to offer more HVAC training, we don't do a lot. We don't do any training on how to sell energy efficiency – we would like to offer that type of training." – EEA Program Staff

Staff stated that there have been discussions about potentially offering some coursework via a webinar format in the future, but both program staff and utility stakeholders were uncertain if the webinar format would be feasible for the industry.

## 7.3 Training Marketing and Delivery

EEA program staff partners with the Arkansas Association of Energy Engineers (AAEE) and Arkansas Manufacturing Solutions to deliver the C&I training. The AAEE administered several of these seminars including four Energy Management trainings, three Energy Management Certification courses, and the school district Energy Star trainings.

Upcoming courses were marketed and promoted through training providers, utility stakeholders, press releases, and the EEA website. There were also cross-promotional efforts through contractors' websites and other professional organizational networks. One utility stakeholder noted there were no events held within their service territory in program year 2017 and was not sure about 2016. Because of this, they felt they did not get the value out of the programs and believe it should be addressed moving forward.

Course brochures for 2016 were reviewed by the Evaluator. These brochures are one-page and include details such as: date, location, cost, online registration link (static), course content, presenter bio, and course credit information. In addition, the AAEE-led course brochures detail what should be brought (books, calculator) and a link to preparatory guides.

Information on who is best suited for the course to assist potential attendees as they consider if the trainings are suitable is inconsistently included.

How trainees learned about the training opportunities is displayed in Table 7-1.

Table 7-1: How Learned About 2016 Seminar

| Method   | Percent<br>(n = 33) |  |
|--|---------------------|--|
| Through the Arkansas Association of Energy Engineers                                 | 33%                 |  |
| Email message  | 30%                 |  |
| Energy Efficiency Arkansas flyer   | 15%                 |  |
| Someone in your company at the time  | 15%                 |  |
| SWEPCO Representative  | 3%                  |  |
| Word of mouth  | 3%                  |  |
| Note: The total percent of respondents exceeds 100% because respondents were able to |                     |  |
| provide multiple responses.  |                     |  |

## 7.4 Summary of C&I Training and Outreach Activities and Training Attendance

The number of trainings budgeted and completed is displayed in Table 7-2. As indicated by program staff, the program exceeded its goal to offer 21 budgeted workshops. In 2016, 22 seminars were conducted, 6 of which were targeted to school district staff. The participants totaled 340 approximating 3,335 man-hours of training. Included in the participants were 18 staff from six school districts who received Energy Star Portfolio Manager training.

In addition to the training courses, EEA was a major sponsor of the AAEE Conference and Tradeshow. At this conference, professionals attended energy efficiency seminars.

The Arkansas Industrial Energy Clearinghouse that had been operational in previous years was not as active in 2016.

Attendance rates varied among the different training topics, from 9 to 20 (not shown in Table). The program staff indicated 15 to 22 attendees is considered well-attended and that they only had to cancel two trainings due to low interest, which is defined as less than seven enrollees.<sup>7</sup>

Staff reported that interest was highest among trainings that offer certification (e.g., Certified Energy Manager, Business Energy Professionals and Certified Energy Auditor), along with strong interest for boiler training. There were minimal costs associated with the trainings (between \$25 to \$500 for certification courses) and staff did not believe those were a barrier.

Timing was identified as a potential barrier to participation, as some might not be able to attend courses during the workday. There has been discussion about holding some trainings in the evening with utility stakeholders, however, there have not yet occurred.

| Table 7-2.  | Summary of | Rudgeted | and Completed | C&I Training |
|-------------|------------|----------|---------------|--------------|
| 1 abic 1-2. | Summary of | Duugeteu | and Completed | Cai Hailing  |

| Training Type                                  | 2016<br>Budgeted<br>Workshops | 2016<br>Completed<br>Workshops | Total 2016<br>Attendees | Total Number of Attendees that Passed Certification Exam |
|--|-------------------------------|--------------------------------|-------------------------|--|
| School Facility Managers Training and Webinars | 6                             | 10                             | 160                     | NA   |
| Energy Efficiency in Industry Workshops        | 4                             | 3                              | 36                      | NA   |
| Commercial HVACR Load Sizing and Duct Design   | 2                             | 1                              | 23                      | NA   |
| Building Commissioning<br>Workshop             | 1                             | 0                              | 0                       | NA   |

ADM Associates 45

\_

<sup>&</sup>lt;sup>7</sup> The trainings were on Foundatiosn of Industrial Energy Efficiency and Fundamentals of Compressed Air. Both were to be held in Jonesboro.

| Training Type  | 2016<br>Budgeted<br>Workshops | 2016<br>Completed<br>Workshops | Total 2016<br>Attendees | Total Number of Attendees that Passed Certification Exam |
|--|-------------------------------|--------------------------------|-------------------------|--|
| Energy Audits for<br>Commercial/Industrial<br>Training | 1                             | 1                              | 15                      | 12   |
| Industrial Compressed Air<br>Systems Training          | 1                             | 2                              | 33                      | NA   |
| C.E.M. Certification                                   | 2                             | 1                              | 10                      | 7  |
| Benchmarking and Performance Training                  | 1                             | 0                              | 0                       | NA   |
| Pumping System Optimization                            | 1                             | 1                              | 9                       | NA   |
| Motor Systems Management Training                      | 1                             | 2                              | 43                      | NA   |
| Boiler Operation and Maintenance Training              | 1                             | 1                              | 11                      | NA   |
| Totals   | 21                            | 22                             | 340                     |  |
| Source: EEA Annual Report 2016                         |                               |                                |                         |  |

The 16 training locations that were not focused on school districts were concentrated in six counties (see Table 7-3). Some potential trainees in southern Arkansas may be reached if additional trainings are scheduled in that geographic location.

Table 7-3: Number of C&I Trainings by County

| County     | No. of<br>Trainings | Percent of Trainings |
|------------|---------------------|----------------------|
| Baxter     | 1                   | 6%                   |
| Craighead  | 2                   | 13%                  |
| Pope       | 6                   | 38%                  |
| Pulaski    | 3                   | 19%                  |
| Sebastian  | 1                   | 6%                   |
| Washington | 3                   | 19%                  |
| Total      | 16                  | 100%                 |

## 7.5 Participant Feedback on Training

## 7.5.1 Motivations for Attending Training

Expanding technical knowledge was the most cited (42%) motivation to attend trainings (see Figure 7-1).



Figure 7-1: Motivation to Attend Training

## 7.5.2 Usefulness of Training

A majority of training attendees found the training to be useful.

- The majority of trainees rated the trainings as "Very useful" (69%) and none found it "Not at all useful" (see Figure 7-2). Six respondents suggested changes to make the training more useful. The most commonly made suggestion was to include additional information or greater depth (n = 3). Other suggestions were to offer it in more regions across the state, make the connections to energy efficiency stronger, and improve the clarity of presentation (see Table 7-4).
- In line with the motivation to expand technical knowledge, the most cited useful aspect of the trainings (see Figure 7-3) was technical information (62%).

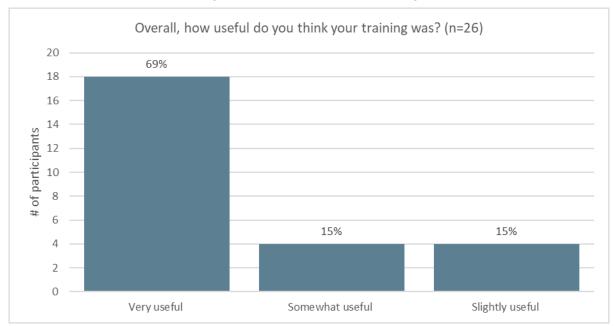


Figure 7-2: Usefulness of Training



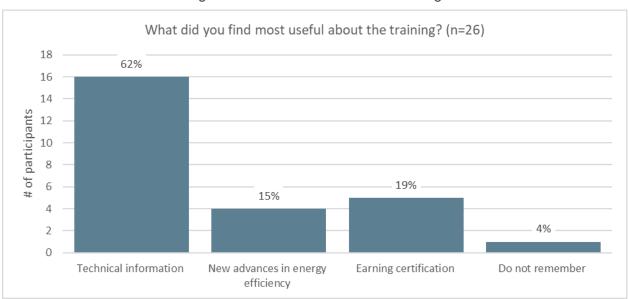


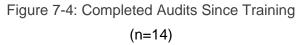
Table 7-4: Summary of Suggestions for Making Training More Useful

| Type of Comment                             | n | Comments Made   |
|---|---|---|
| Positive comment                            | 3 | It was very good- I have no suggestions It was great as it was.  Not much to improve on, continue to find professionals in the field and utilize their strength and knowledge to be used throughout our programs. |
| More depth, additional information          | 3 | The training would have been more useful with clear notation about residential vs commercial application.  More in-depth information.  Field exercises  |
| Offer training in more regions of the state | 1 | Having all available courses locally available; in Northwest Arkansas, rather than travel required.   |
| Stronger connection to energy efficiency    | 1 | I was surprised to see that the course did<br>not relate new technologies to energy<br>efficiency, especially since it was hosted<br>by AAEE. Overall, the EE content was<br>lacking.                             |
| Greater clarity of presentation             | 1 | I'm old and slow, so certain technical info could have been covered in more elementary terms, but that would have slowed everyone else down. Overall, it was probably paced well.                                 |

## 7.5.3 Effect of Training

About half (n=8) of this subsample had completed energy audits of commercial facilities prior to the 2016 training. This suggests that for nearly half of the attendees, the training may not be meeting its primary objectives.

- Since the training, 57% have completed an audits (see Figure 7-4). The number of audits completed after the training ranged from 1 to 50.
- About two-thirds of people that completed audits reported that the training had a moderate to large effect on their audit practices and the number of audits they complete (see Figure 7-5).



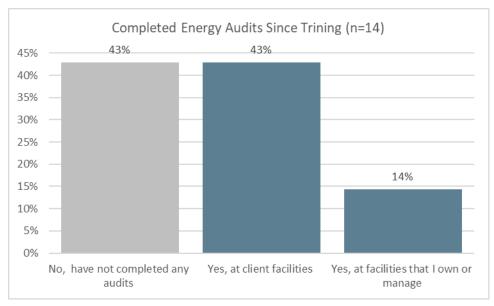
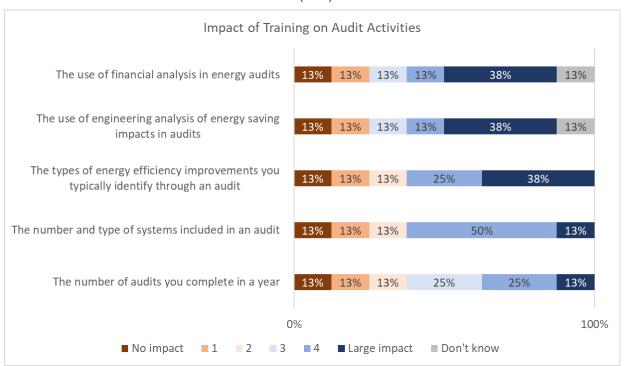


Figure 7-5: Impact of Training on Audit Activities (n=8)



#### 7.5.4 **Efficiency Improvements Made**

The nine survey-takers who were a "Contractor or energy services provider" or "Staff at a commercial or industrial facility" when attending the 2016 trainings were asked about the efficiency improvements they had made.

- Energy efficient lighting (18%), adjustment of equipment schedules (16%), installation of VFDs (11%), and installation of efficient cooling equipment (11%) were the most commonly reported actions taken (Table 7-5).
- Of the nine persons in the subsample, 89% (n=8) stated EEA was "Very influential" or "Somewhat influential" in taking the energy savings actions detailed above. The same percentage (89%) applied for a utility rebate or incentive for the improvements made (Table 7-6).

Table 7-5: Energy Efficiency Improvements Made because of Training

| Response   | Percent<br>(n = 38) |  |
|--|---------------------|--|
| Installed energy efficient lighting  | 18%                 |  |
| Adjusted equipment schedules to run only when needed                                 | 16%                 |  |
| Installed variable frequency drives (VFDs)   | 11%                 |  |
| Installed high efficiency cooling equipment  | 11%                 |  |
| Installed lighting controls  | 8%                  |  |
| Implemented an energy management system  | 8%                  |  |
| Installed high efficiency heating equipment  | 8%                  |  |
| Completed a compressed air efficiency projects                                       | 5%                  |  |
| Installed high efficiency water heating improvements                                 | 3%                  |  |
| Used for energy management   | 3%                  |  |
| None   | 8%                  |  |
| Don't know   | 3%                  |  |
| Note: The total percent of respondents exceeds 100% because respondents were able to |                     |  |

provide multiple responses.

Those who made improvements were asked to briefly describe the changes:

"We were already somewhat mature in terms of energy efficiency, however we implemented a Honeywell HVAC controls system for our facility post the seminars."

"LED lighting throughout the plant and offices; installed 2 energy efficient air compressors and 1 air dryer; implemented a shut-off schedule for equipment."

"We are constantly looking for energy saving opportunities, such as upgrading HVAC systems, LED lighting exterior, lighting controls/Occupancy-sensors, lower wattage T-8 lamps, program start ballast, de-lamping from 4 bulbs to 2, 95% gas furnaces installed, etc."

<sup>&</sup>quot;Installed 23 Wi-Fi thermostats in Church and a few more in commercial setting and homes."

<sup>&</sup>quot;Lighting, HVAC equipment and controls, humidity controls."

"I only recommend to staff projects for funding. Staff determines priorities. Major lighting retrofit of old main is currently ongoing."

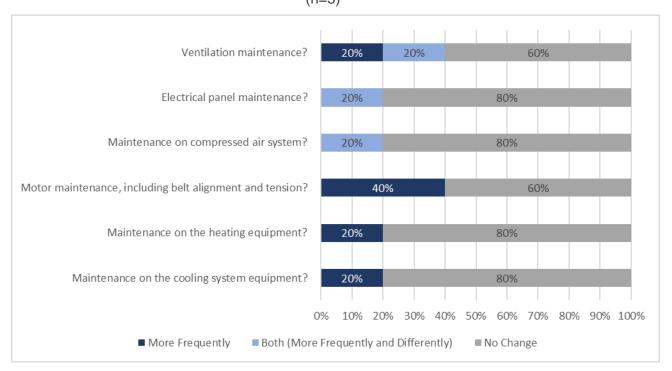
Table 7-6: Source of Rebates and Incentives

| Utility  | Percent<br>(n = 10) |  |
|--|---------------------|--|
| Entergy  | 40%                 |  |
| CenterPoint  | 20%                 |  |
| OG&E   | 20%                 |  |
| SWEPCO   | 10%                 |  |
| Black Hills Energy   | 10%                 |  |
| Note: The total percent of respondents exceeds 100% because respondents were able to provide multiple responses. |                     |  |

Five persons who were a "Contractor or energy services provider" or "Staff at a commercial or industrial facility" indicated how they performed maintenance activities differently since the training (see Figure 7-6).

- A minority of respondents reported making changes for each of the maintenance activities (Figure 7-6).
- One respondent each rated the training's influence in the changed maintenance practices as "Very influential" and "Somewhat influential." Two people indicated EEA's influence as 'Neutral".

Figure 7-6: Change to Maintenance Activities Since Training (n=5)



## 7.5.5 Future Opportunities

Most, 88% (n=23), of all respondents wished to learn about future training opportunities.

- Email was the most requested (88%) method to learn of future trainings and one person selected "EEA Website." Mail and Social Media were not chosen.
- Single day training was by far the preferred format for those who attended training in 2016 (see Table 7-11). Seventy-nine percent mentioned preferring this format. Internet based training was preferred by fewer respondents live web-based training (29%) and recorded web-based (21%).
- Respondents were asked to select one or more topic areas that they would find interesting for future trainings (see Figure 7-7).
- Additional topics of interest that were mentioned were:
  - Innovations for residential audits and efficiency;
  - Smart metering and energy management;
  - Energy efficiency for agriculture;
  - Water conservation;
  - o Lighting; and
  - o Controls.
- Former trainees were asked how important tuition cost was in their likelihood to attend future seminars. Most (87%, n=20) indicated cost was "Very important" (n=7) or "Somewhat important" (n=13).
- Also, regarding future trainings, an open-ended question inquired what geographic area would increase the past attendees' ability to attend more trainings (see Table 7-7).

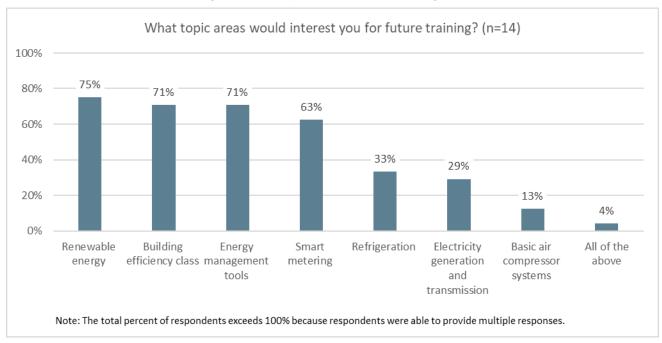
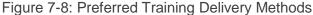


Figure 7-7: Topics for Future Training



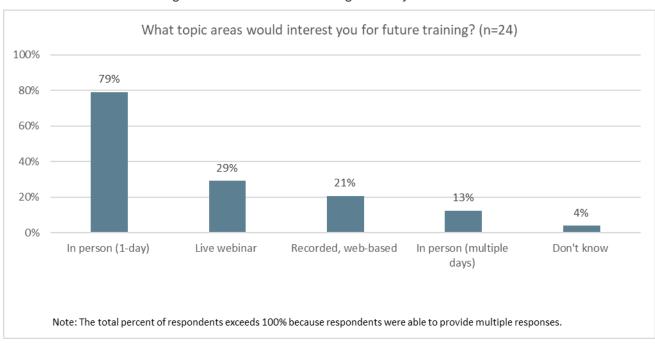


Table 7-7: Future Trainings: Geographic Preference

| Geographic Preference      | Percent<br>(n =20) |
|----------------------------|--------------------|
| Central Arkansas           | 30%                |
| Little Rock                | 20%                |
| Northwest Arkansas         | 20%                |
| Russellville/Lake Point    | 15%                |
| Ft. Smith and Fayetteville | 10%                |
| Western Arkansas           | 5%                 |

## 7.5.6 Suggestions for How EEA can Make Homes and Businesses in Arkansas more Energy Efficient

The following suggestions for improving the efficiency of homes and businesses in Arkansas were made by survey respondents.

- Require builders to build an EE home to a certain standard.
- Low Income Loan Program
- Better inform utility customers about the importance of energy efficiency, advocate for more lucrative incentives for small businesses, find more EEMs for multifamily apartment communities.
- Partner with the Electric Cooperatives as they do not offer many incentives
- Educate the public
- Keep the information current and accessible.
- Continue to help promote the energy efficient programs that the utilities are offering and spreading the word on how to. Perhaps more opportunities to do open forum seminars for the public?
- Continue to host Energy Efficiency topics in the form of Seminars and certification courses and exams.
- Keep up the good training opportunities.
- Continue to promote CEM and CEA training.

## 7.6 Training Evaluations

Training evaluations, completed by participants, were located for 6 of the 22 seminars (see Table 7-8). For some courses evaluations had been tallied and for other courses, individual evaluations were provided. A summary of the participants' evaluations follows.

Table 7-8: Provided Course Evaluations

| Event No. | Start Date         | Class                                  | Training<br>Location | Provider |
|-----------|--------------------|--|----------------------|----------|
| 5         | April 13, 2016     | Commercial Building<br>Energy Auditing | Russellville         | AAEE     |
| 9         | August 18, 2016    | Boiler Operation Safety<br>Training    | Mountain Home        | EEA      |
| 11        | November 15, 2016  | Essential Building Tune-<br>Ups        | Russellville         | AAEE     |
| 13        | September 28, 2016 | Fundamentals of Lighting Efficiency    | Russellville         | AAEE     |
| 14        | October 18, 2016   | Fundamentals of Compressed Air         | Little Rock          | EEA      |
| 16        | October 26, 2016   | Advanced Lighting Efficiency           | Russellville         | AAEE     |

Course evaluations were located for four AAEE-administered courses (see Table 7-9). An average score was calculated to indicate how satisfied trainees were with program components. The scale used was 5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly Disagree. Across all courses and all questions average scores were greater than '4' indicating Agreement or Strong Agreement.

Table 7-9: Tally of AAEE Course Evaluations

| Question  | Commercial<br>Building<br>Energy<br>Auditing | Essential<br>Building<br>Tune-Ups | Fundamentals<br>Of Lighting<br>Efficiency | Advanced<br>Lighting<br>Efficiency |
|---|--|-----------------------------------|---|------------------------------------|
| 1) Did the program offer you content applicable to your current role?               | 4.15   | 4.39                              | 4.67                                      | 4.52                               |
| 2) Was the level of instruction appropriate for the subject matter?                 | 4.45   | 4.39                              | 4.94                                      | 4.68                               |
| 3) Was the information presented of good quality and easy to follow?                | 4.27   | 4.39                              | 4.83                                      | 4.56                               |
| 4) Did the afternoon/in-class workshop contribute to your learning?                 | 4.03   | 4.47                              | 4.78                                      | 4.4                                |
| 5) Can you see yourself applying this information in your current role?             | 4.33   | 4.39                              | 4.83                                      | 4.72                               |
| 6) Did you receive sufficient information for the program prior to attending?       | 4.21   | 4.56                              | 4.83                                      | 4.64                               |
| 7) Did the setup of the room (audio, video, and layout) support the program format? | 4.52   | 4.58                              | 4.89                                      | 4.68                               |
| Number of Evaluations   | 33   | 36                                | 18  | 25                                 |

The Boiler Operation Safety evaluation questions are provided below:

- Overall quality of seminar
- Instructor's presentation skills
- Instructor's knowledge of subject matter
- Quality of the manuals
- Effectiveness of the visual aids
- Overall quality of the facility
- Location of the facility

Ten completed Boiler Operation Safety evaluations were located. Six attendees ranked all items "Exceeded" or "Greatly exceeded" expectations. The remaining four attendees noted "Met expectations", 'Exceeded' or 'Greatly Exceeded' expectations for all items. For no item was "Below" or "Far Below" expectations selected.

The content of the Fundamentals of Compressed Air evaluation topics is provided below. The rating scale ranged from "1-Strongly Disagree" to "5-Strongly Agree".

- I would recommend this training
- Overall, I am satisfied with the provided training
- As a result of this training I am better to:
  - (compressed air specific questions)

#### The training:

- addressed the issues as advertised
- used effective teaching methods
- o provided useful handouts for future reference
- o provided information that I will apply in my work

#### Instructor:

- knows the material
- provided useful information to me
- o stayed on topic
- communicated effectively
- responded to questions effectively

#### Training logistics:

- the facility provided an effective learning environment
- o registration and confirmation processes were better than most
- o the location of the training was convenient for me
- Participation in this training has improved my knowledge about optimizing compressed air systems

Twenty-three completed Fundamentals of Compressed Air evaluations were located. Eight attendees ranked all questions "5-Strongly Agree". Another six marked a combination of "5" and "4". The remaining nine ranked items between "3 – Neither Agree nor Disagree" and "5-Strongly Agree". It is believed one attendee inadvertently reversed the scale in their markings.

An item that often received a "3-Neither Agree nor Disagree" was "The location of the training was convenient to me".

#### 7.7 EEA Website

Respondents to the training survey were also asked to provide feedback on the EEA website.

- Fifty-four percent of all survey-takers (n=14) had visited the EEA website. Of those, 11 had visited in the past six months.
- The most reason for visiting the website most often given by training attendees was to view the events and training calendar (mentioned by 71% of respondents who had visited

the website). Getting information about incentives and rebates was the next most frequently given reason (mentioned by 14% of website visitors) (Table 7-10).

- The training and events calendar was the aspect of the website that was most frequently considered to be the most useful (54%) followed by information on incentives and rebates (15%), and accessing their utilities webpage (15%) (see Table 7-11).
- No respondents indicated that navigating the website was difficult and 78% the information on the website completely met their needs.

Table 7-10: EEA Website - Reasons Visited

| Reason  | Percent<br>(n = 14) |
|---|---------------------|
| Events/training calendar  | 71%                 |
| Incentives/rebates information  | 14%                 |
| Reach my utility's webpage  | 7%                  |
| Videos about energy efficiency  | 7%                  |
| Fact sheets about how to save energy                                      | 7%                  |
| Just to browse  | 7%                  |
| Review the website  | 7%                  |
| To continue to look at opportunities to promote EE programs, insuring     |                     |
| correct information   | 7%                  |
| Note: The total percent of respondents exceeds 100% because respondents w | ere able to         |

Table 7-11: EEA Website - What Was Most Useful

| Response                             | Percent<br>(n = 13) |
|--------------------------------------|---------------------|
| Events/training calendar             | 54%                 |
| Incentives/rebates information       | 15%                 |
| Locate my utility's webpage          | 15%                 |
| Videos about energy efficiency       | 0%                  |
| Fact sheets about how to save energy | 0%                  |
| Energy savings calculator            | 0%                  |
| All of the above                     | 8%                  |
| Don't know                           | 8%                  |

## 8 Key Findings and Recommendations

Based on the PY2016 EEA process evaluation the key findings are presented by program area, followed by suggested actions and recommendations.

## 8.1.1 Cross-Cutting Findings

- **PY2016 was a transition year.** The EEA program went through a transition year, where staff moved from the Economic Development Commission (AEDC) to the Department of Environmental Quality (ADEQ). This move brought additional resources to support communication and outreach efforts.
- Data collection and management is consistent with Arkansas TRM requirements. the program meets the Arkansas Technical Reference Manual Protocol A: Program Tracking and Database requirements. Additionally, staff believes that they collected all the data needed to effectively monitor the program. However, records on contact information of those who received residential tip kits were incomplete for some recipients are there opportunities to collect more complete training evaluation data and information collected through following-up with recipients of informational materials to monitor program performance.
- QA/QC Procedures. Staff indicated there were no formal quality assurance and/or control for the EEA programs, which is inconsistent with program management best practice. Staff does engage in some QA/QC procedures such as completion of some training evaluations and maintenance of an inventory of print materials. However, there is no formal quality control and assurance plan in place.
- Staff are enthusiastic about the programs. Feedback from program staff was positive about EEA. It appeared from the interviews that staff enjoyed outreach events and were pleased with goals and outcomes for Residential Outreach and C&I training programs. Utility stakeholders indicated that when they accompany program staff at outreach events, they notice the enthusiasm and engagement with customers.
- Staffing constraints restricted program reach. Staff indicated that in 2016 they had limited staffing resources to support outreach efforts. However, this situation has subsequently improved somewhat since the program transitioned to a new department that provides additional internal resources to assist with the program (e.g., communication team who can assist with press releases and coordinate hosting facilities). Nevertheless, one challenge that remains is the staff is unable to multiple events if they are held at the same time.
- Utility stakeholders expressed concerns about communication level. Utility stakeholders indicated they would like to increase communication with EEA program staff either through in-person meetings or more frequent conference calls. One utility stakeholder noted that communication was not sufficient in 2016 but that it has improved in recent years.

## 8.1.2 Residential Education and Outreach Findings

#### 8.1.2.1 Events

- Residential Education and Outreach met event goals. The quantity of outreach events held met EEA's goal of attending at least 40 events in 2016 (42 were attended 112% of the goal). A specific target for fact sheets distributed is not known. One utility stakeholder expressed concern no events had occurred in his/her service area.
- Limited follow-up with contacts made at events. Visitors to event booths are encouraged to provide their contact information on sign-in sheets and indicate their utility providers, whether they would like to receive rebate/incentive information, whether they would like additional EEA information, and if they are aware of EEA or Tighten Up Programs. Staff indicated there is limited follow up after residential customers are provided education materials at the various events they attend as part of their outreach efforts but those who are interested in EEA information were sent the monthly partner newsletter. Additionally, while information the information of contacts interested in utility rebates is passed along to the appropriate utility within a month of the event, there is not any follow-up to determine if the customer was contacted by the utility.

### **8.1.2.2** Training

- Residential training did not take place in 2016 due to budgetary constraints and departmental reorganization. Staff pointed to budget constraints and the resources required to transition to the program to a new department as the reasons for not offering the training.
  - Recommendation 4: Provide residential training. This programmatic aspect of EEA did not take place in PY2016. It is viewed as a niche area EEA could positively affect. One stakeholder believed it would beneficial for trade allies in residential energy efficiency who, in 2016, had to leave Arkansas to gain residential audit certifications. Gaining a network of energy professionals, as EEA becomes a residential training resource, who interact with residents can greatly increase EEA's reach and impact.

#### 8.1.2.3 Materials

- Direct bulk mailings were not active. Seasonal mailings of fact sheets did not occur. Fifteen requests for tip kits were filled in 2016. The number of tip kits requested ranged from 1 to 448.
- Real estate organizations requested and received the majority of materials. Partial contact information was provided for those who received tip kits. Six were related to real estate, two were from electric coops, another two were with an energy efficiency implementer, one from a community action group, and another with a sustainability summit.

■ Fact sheets provide useful information but have not been updated recently. The style of the fact sheets is uniform and colorful. A first impression is that they are somewhat text-heavy as opposed to balanced with white space and graphics. The action items are nicely categorized by cost burden and may also benefit from less text for easier comprehension. Updates with newer technologies may make the fact sheets increasingly helpful.

## 8.1.3 Media Promotion Findings

Media promotion program budget was cut in PY2016. The media budget for 2016 was \$100,000, an amount that was \$20,000 (16.7%) less than the annual budgets outlined in the Third Amended MOU. Staff stated that the program focused on no and low-cost media opportunities because of the budget reduction.

#### 8.1.3.1 Mass Media

■ 2016 Mass media activities focused on print media. In 2016, EEA purchased print advertisement in several publications such Arkansas Democrat-Gazette Living Green, Earth Day Section, and Home Show. The media budget for 2016 was \$100,000.

#### 8.1.3.2 Social Media

Social media is underutilized as an outreach strategy. While the EEA program has a Twitter and Facebook account, the Evaluators discovered the posts were from several years ago. Staff interview respondents indicated that the departmental regulations around social media may need to be modified to allow regular postings.

#### 8.1.3.3 Website

- EEA website is well designed, with useful resources and tips. Although the website design and layout from 2016 was not reviewed, the Evaluators found the format is bold, easily read, and allows for a good amount of white space. The color scheme and branding are appealing, and valuable resources and tips are provided. However, a few navigation issues were identified.
- Low utilization of EEA website. Per the Annual Report<sup>8</sup>, 562 page views of the EEA website occurred in 2016. Additionally, 6% of 200 randomly selected residents had visited the EEA website. The most frequent reason given was to learn of incentives and rebates. Alternatively, the previous C&I training participants who had visited the website did so to learn about upcoming events and trainings.

ADM Associates 62

\_

<sup>8</sup> EEA 2-16 Annual Report. Arkansas Energy Office. http://www.apscservices.info/EEInfo/EEReports/EEA%202016.pdf (accessed 09JUL2018)

Identified functionality issues with the EEA website. The rebate and incentive search function did not always provide an accurate link based on information entered. No confirmation email was received when the Evaluators tested the "Want to be notified..." section of the website. Additionally, a check of compliance with accessibility standards check revealed some issues.

## 8.1.3.4 Resident Awareness and Knowledge

- There is an opportunity to increase awareness of utility rebates. Thirty percent of survey respondents indicated that they were aware that utility rebates for energy efficiency were available.
- Opportunity to increase education of energy efficiency improvements and behaviors. Although survey-respondents are engaging in energy behavioral actions to save energy, lower awareness of some relatively lower cost measures and simple energy saving behaviors suggests the opportunities for continued education of Arkansas residents.
- Lack of awareness among residents about EEA programs/website. The majority of survey respondents were not at all familiar with EEA or the Tighten Up campaign. Seventy-five percent of survey participants were also unaware of outreach events or efforts. Twenty-one percent were aware they could learn energy savings tips from the EEA website or toll-free number and 6% had visited the website.

## 8.1.4 Commercial and Industrial Outreach and Education Findings

- Program met the goal for the number of training events in 2016. The program had a goal of holding 21 training events in 2016 and held 22 (105% of the goal).
- Announcements via email and professional organizations are most common way to learn of upcoming C&I trainings. Upcoming trainings were marketed and promoted through training providers, utility stakeholders, press releases and the EEA website. Survey takers mainly learned of the trainings from the AAEE and email.
- Surveyed participants found trainings useful and valuable. Almost 70% of participants surveyed found their training very useful and the technical knowledge gained was mentioned as the most useful training aspect by 62% of survey takers. The number and types of audits, types of energy efficiency improvements identified, and use of engineering and financial analyses were positively impacted by the trainings for some who attended audit-related courses. The contractors, energy services providers, and staff at a commercial or industrial facility most often reported their training positively affected their installations of energy efficient lighting and adjustments of equipment scheduling.
- C&I trainings received high satisfaction among attendees. The course feedback indicate high satisfaction with the courses for which evaluations were provided. Of the participant survey takers, 88% would like to learn of future opportunities which is a proxy for training satisfaction.

- Training evaluations are not consistent. Not all trainings have course evaluations. When the training is AAEE-led, and less frequently in EEA-led trainings, course evaluations are administered. Additionally, there is little follow up with training once it is completed to assess what changes in practice attendees have implemented. As such, some important feedback that could be used to improve the training is not being collected.
- The training locations were concentrated in six counties. Some potential trainees in southern Arkansas may be reached if additional trainings are scheduled in that geographic location.
- Opportunity to better target training topics to audience. There is some indication the training content is not always matched to the intended audience. The finding that many participants in training on performing audits did not complete any audits since completing the training may indicate additional care can be taken to market and open courses to the appropriate audience. Also, survey feedback and utility stakeholders' interviews mentioned advanced topics would be welcomed. Lastly, a review of the training brochures found that these inconsistently identified who the training was intended for.

#### 8.1.5 Recommendations

- Recommendation 1: Develop a quality control and assurance plan. A quality control and assurance plan should detail the objectives of quality control and assurance and the activities that will be monitored.
- Recommendation 2: Take steps to improve communications with utility stakeholders. Improvements in communication may address concerns raised by some utility stakeholders about the communication on program activities. Specific ways to improve overall utility communication include holding regularly scheduled conference calls and inperson meetings, provide regular (either monthly or quarterly) status reports, and look for additional ways to foster the development of a strong partnership between AEO staff and the utilities.
- Recommendation 3: Create a system to monitor event visitors and follow up when referrals are made to utility programs. By creating a system to track and monitor impacts, and marketing and outreach efforts, program staff will be able to determine what activities are most effective at reaching customers and how to best use limited resources.
- **Recommendation 4:** Provide improved residential and commercial training offerings across the state. Residential training is viewed as a niche area EEA could positively affect.
  - EEA should provide the residential training outlined in the Third Amended MOU.
     One stakeholder believed it would beneficial for trade allies in residential energy efficiency who in some cases completed required training out of state.
  - In addition, these training sessions should be offered throughout the state, perhaps incorporating webinars and evening courses to expand the reach of its commercial training courses.

- AEO should also consider expanding its C&I training to cover more advanced topics. Add details to training brochures to inform potential attendees as to their fit for the coursework.
- Recommendation 5: Update and develop new energy efficiency educational content. Program staff indicated the fact sheets were developed about five years ago and have had minor yearly updates. It would be advantageous to revise all fact sheets and create new content to reflect technological changes.
  - Staff could develop materials that focus on relatively low-cost efficiency measures such as air conditioner maintenance and installing smart thermostats. Additionally, materials could be developed that provide behavioral tips such as such as lowering water heater setpoints and using cold water for laundry.
- Recommendation 6: Expand current the current marketing and outreach in new and innovative ways. Specifically, develop a dedicated social media strategy to help build brand recognition and potentially increase traffic to the EEA website. Program staff should also explore gathering analytics (e.g., Facebook's Insights) to measure engagement and reach. At outreach events, encourage visitors to "check-in" by offering an incentive (e.g., entry to win a prize). Other suggestions include:
  - Add DIY video links to the EEA Facebook page. The DIY videos are provided on the website and could be added to the EEA Facebook page.
  - Include website links on educational materials to drive additional usage and provide additional information.
  - Leverage existing activities to promote utility rebates, such as including links to program informational materials on the AEO's program website.
  - Continue to build community awareness of the Energy Efficiency Arkansas program. Activities could include additional marketing and outreach efforts, refera-friend campaign, and/or working with local leaders to increase buy-in or offering increased education and outreach at K-12 schools providing teachers and students kits containing energy-saving products (e.g., LED nightlights, low-flow showerheads, education materials on installation, etc.).
- Recommendation 7: Enhance the user experience with the program website by improving navigability and functionality. The Evaluators identified a few issues with navigating and interacting with the EEA website that could be improved by taking steps such as:
  - Modify and improve website navigation. Although links are provided on banners, it may not be evident to visitors that much educational material exists below the 'Find Energy Efficiency Rebates and Incentives in Arkansas' form. A side bar of links or alternate reorganization may increase interest and time spent on the website.

- Periodically review website links and search engine results. Staff should periodically review the program for broken links and verify that search engines are returning the intended results. This will help improve the users experience.
- Send a confirmation email to users of the website who provide an email address in the "Want to be notified..." section of the website.
- Recommendation 8: Hold focus groups for hard-to-reach residents to identify approaches to develop strategies to engage them. Such residents include those that live in rural areas and/or are less interested in energy efficiency. Focus groups could be used to develop strategies to engage these groups based on their needs, interests, and resources.
- Recommendation 9: Develop a comprehensive training evaluation for all C&I trainings. A thorough training evaluation should include sections to gauge knowledge change, satisfaction, attitudes and beliefs, and behavior change.
  - In addition, AEO should maintain and track contact with trainees. Attendees should be entered into a data system to track attendance, contact information, and followup outcomes.

# Appendix A. Residential Survey Sample and Demographic Characteristics

Zip codes were mapped to the six regions detailed in Figure A-1. The sample was designed such that equal numbers of respondents were surveyed from each of the six regions (see Table A-1 for a count by region). Additionally, a homeowner/renter mix of 70%/30% was attempted to ensure the respondents reflected Arkansas's homeownership rate.

The age of the respondents was skewed toward seniors, with approximately 55% of the respondents age 65+ although approximately 20% of the adult population in the state is 65 or older.<sup>9</sup>



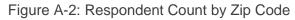
Figure A-1: Arkansas Regional Map

Table A-1: Respondent Count by Region

| Region        | Respondents |
|---------------|-------------|
| Central       | 33          |
| Lower Delta   | 33          |
| North Central | 33          |
| Northwest     | 34          |
| Southwest     | 34          |
| Upper Delta   | 33          |

<sup>9</sup> https://www.census.gov/quickfacts/ar

The respondent coverage by zip code is provided in Figure A-1.



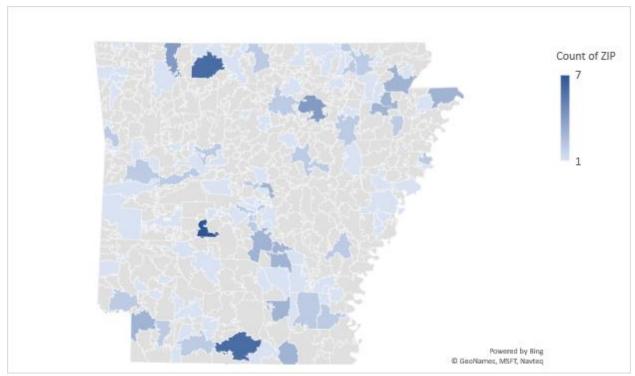


Table A-2: Best Description of Your Home

| Housing Type  | Percentage<br>(n=200) |
|---|-----------------------|
| Single-family house detached from any other house   | 68%                   |
| Manufactured home   | 13%                   |
| Single family house attached to one or more other houses, for example, duplex, row house, or townhome | 5%                    |
| Apartment in a building with 2 to 3 units   | 3%                    |
| Apartment in a building with 4 or more units  | 2%                    |
| Custom built home   | 1%                    |
| I live on a add on to a trailer.  | 1%                    |
| Old frame house   | 1%                    |
| RV  | 1%                    |
| Don't know  | 2%                    |
| Refused   | 7%                    |

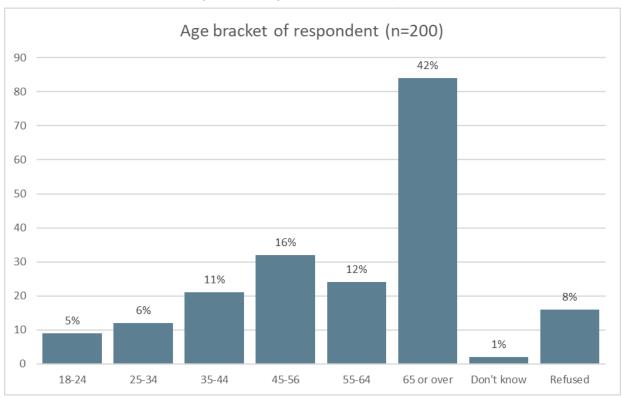
Table A-3: From Which Utilities Do You Receive Bills?

| Utility   | Count | Utility                                       | Count |
|---|-------|---|-------|
| Entergy   | 82    | Arkansas Oklahoma Gas<br>Company              | 2     |
| CenterPoint   | 31    | AP and L                                      | 1     |
| AEP/Southwestern Electric Power/SWEPCO                              | 13    | Arkansas Energy                               | 1     |
| Electric Cooperatives of Arkansas                                   | 11    | Barton Lexa Water Association                 | 1     |
| Black Hills Energy  | 10    | C & L Electric Coooperative                   | 1     |
| OG&E  | 6     | Craighead Electric Cooperative                | 1     |
| Clay County Electric  | 3     | Energy Arkansas and City of Hot Springs       | 1     |
| CNL Electric  | 3     | Gas, light, and water (company not specified) | 1     |
| First Electric  | 3     | Mississippi County Electric                   | 1     |
| Petite Jean   | 3     | Natural gas and water utilities               | 1     |
| Empire Electric   | 3     | Does not pay utilities                        | 1     |
| Electric company (company not specified)                            | 3     | Palagoaualb                                   | 1     |
| Arkansas Valley Electric  | 2     | Propane                                       | 1     |
| City provider (company not specified)                               | 2     | South central Arkansas                        | 1     |
| Pay bills for electricity, gas, and water (companies not specified) | 2     | Water company.                                | 1     |
| North Arkansas Electric Company                                     | 2     | Don't know                                    | 20    |
| Ozark Electric  | 2     | Refused                                       | 14    |
| REA   | 2     |   |       |

Do you own or rent home? (n=200)180 78% 160 140 120 100 80 60 40 14% 7% 20 2% 0 Refused Own Rent Don't know

Figure A-3: Own or Rent Home





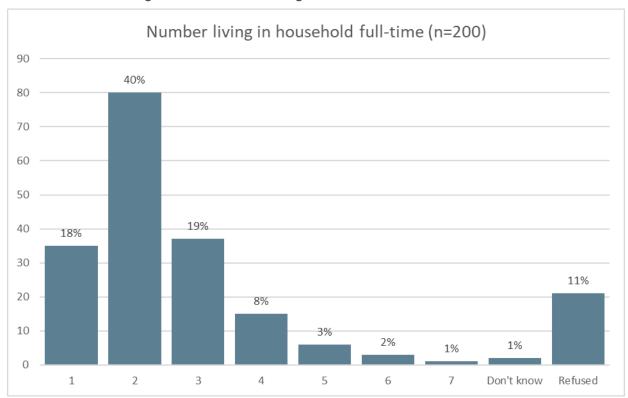
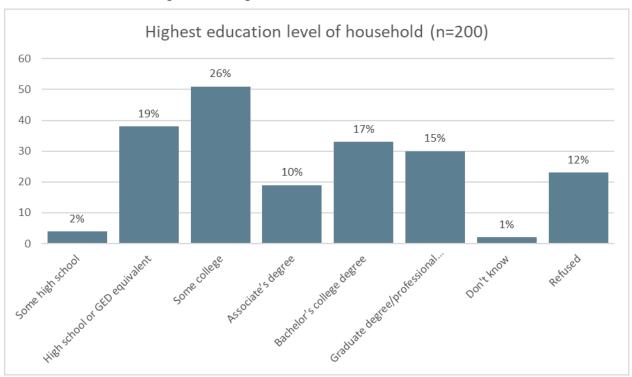


Figure A-5: Number Living in Household Full-Time



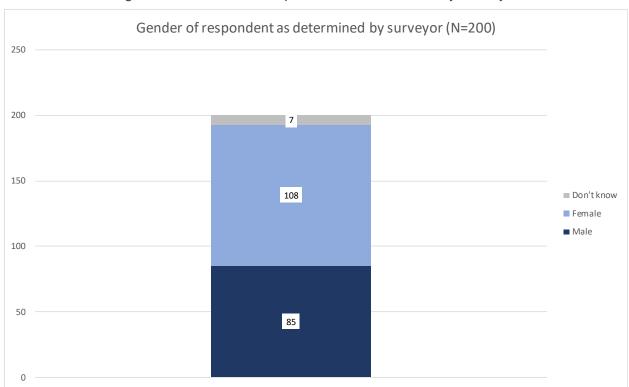


Respondents that refused to answer the household size and LIHEAP income cutoff questions were read income ranges and asked which included their pre-tax household income (see Table A-4).

Table A-4: Range of Pre-Tax Household Income

| Income Range        | Percent<br>(n = 66) |
|---------------------|---------------------|
| Less than \$25,000  | 5%                  |
| \$25,000 - \$49,999 | 5%                  |
| \$50,000 - \$74,999 | 0%                  |
| \$75,000 - \$99,999 | 2%                  |
| \$100,000-\$149,999 | 0%                  |
| \$150,000 or above  | 0%                  |
| Don't know          | 20%                 |
| Refused             | 70%                 |

Figure A-7: Gender of Respondent as Determined by Surveyor



## Appendix B. LIHEAP Eligibility

The random residential survey was deemed an opportunity to gain insight into Low Income Home Energy Assistance Program (LIHEAP) eligibility and the senior population. Questions about age, size of household, and income were asked to determine who may be eligible for LIHEAP and/or in the senior population. The aggregated results are presented in Figure B-1 and Table B-1.

The 134 respondents who answered all relevant questions are categorized below. The categorization '65+' indicates someone in the household was aged 65+.

All those LIHEAP-eligible account for 31% (n=41) and all those senior aged account for 54% (n=73) of the 134 who responded in full to these questions. The count of those either LIHEAP-eligible or senior-aged is 22 + 19 + 51 = 92 (69%). The data are presented in tabular form below (see Table B-1).

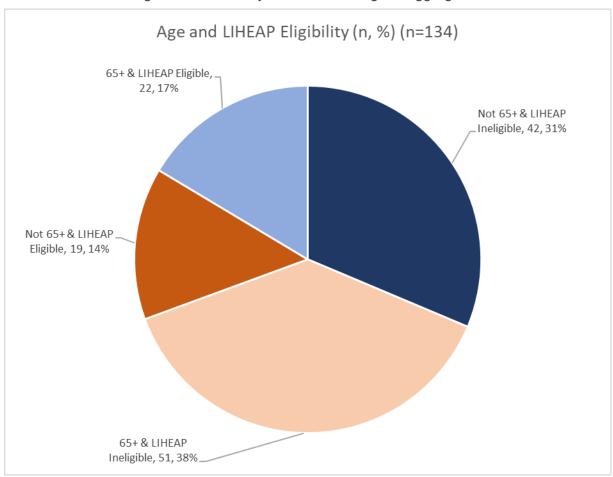


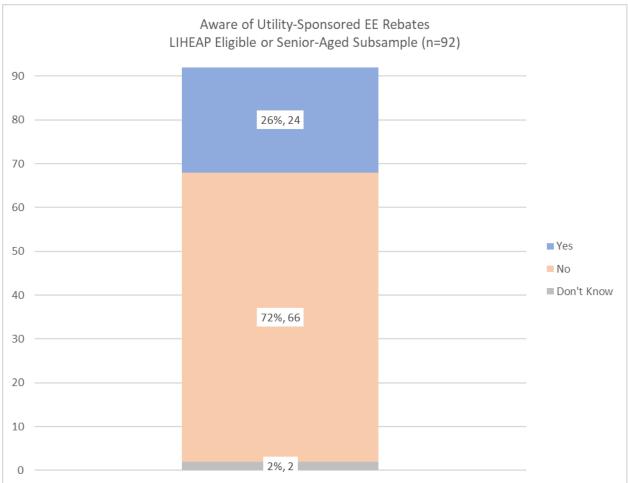
Figure B-1: Seniority and LIHEAP Eligible Aggregation

Table B-1: LIHEAP Eligibility by Seniority

|          | LIHEAP Eligible |    |       |  |
|----------|-----------------|----|-------|--|
|          | Yes             | No | Total |  |
| 65+      | 22              | 51 | 73    |  |
| Under 65 | 19              | 42 | 61    |  |
| Total    | 41              | 93 | 134   |  |

The subsample that is either LIHEAP-eligible or senior-aged was aware of utility-sponsored energy efficient (EE) rebates to a similar degree as the 200 randomly sampled residents detailed in Appendix A. The general population survey reported 30% awareness and the subsample reported 26% awareness (see Figure B-2).





## Appendix C. Residential Survey Tabulations

|   | T                   | 1     |                      |
|---|---------------------|-------|----------------------|
| 2. Am I reaching you on a cell phone?   | Response            | Count | Percent<br>(n = 200) |
|   | Yes                 | 97    | 49%                  |
|   | No                  | 103   | 52%                  |
|   |                     |       |                      |
| 3. Is this a safe time to talk - and you                                      | Response            | Count | Percent<br>(n = 97)  |
| are not driving?  | Yes                 | 97    | 100%                 |
|   | No                  | 0     | 0%                   |
|   |                     |       |                      |
|   | Response            | Count | Percent<br>(n = 200) |
| 4. We have your zip code listed as  | Yes                 | 188   | 94%                  |
| <zip>. Is that correct?</zip>   | No                  | 12    | 6%                   |
|   | Don't know          | 0     | 0%                   |
|   | Refused             | 0     | 0%                   |
|   |                     |       |                      |
| 5. May I ask for your correct zip code?                                       | Response            | Count | Percent<br>(n = 12)  |
| If Yes: Input Zip Code  | Yes                 | 0     | 0%                   |
|   | No                  | 0     | 0%                   |
|   |                     |       |                      |
| 6. Energy Efficiency Arkansas, which is also known as EEA is a partnership    | Response            | Count | Percent<br>(n = 200) |
| between the Arkansas Energy Office  | Not at all familiar | 120   | 60%                  |
| and Arkansas electric and gas utilities.                                      | Not too familiar    | 19    | 10%                  |
| Before this call today, how familiar were you with Energy Efficiency          | Somewhat familiar   | 32    | 16%                  |
| Arkansas? (READ: Not at all familiar,   | Very familiar       | 27    | 14%                  |
| Not too familiar, Somewhat familiar,  | Don't Know          | 2     | 1%                   |
| Very familiar).   | Refused             | 0     | 0%                   |
|   |                     |       |                      |
| 7. Energy Efficiency Arkansas ran a   | Response            | Count | Percent<br>(n = 200) |
| marketing campaign with the slogan<br>Tighten Up. Before this call today, how | Not at all familiar | 161   | 81%                  |
|   | Not too familiar    | 15    | 8%                   |
| familiar were you with the Tighten Up campaign? (READ: Not at all familiar,   | Somewhat familiar   | 15    | 8%                   |
| Not too familiar, Somewhat familiar,  | Very familiar       | 3     | 2%                   |
| Very familiar).   | Don't Know          | 6     | 3%                   |
|   | Refused             | 0     | 0%                   |

|  | Response                           | Count | Percent<br>(n = 30)  |
|--|------------------------------------|-------|----------------------|
|  | News story                         | 4     | 13%                  |
|  | Energy Efficiency Arkansas website | 7     | 23%                  |
|  | Fact sheets                        | 10    | 33%                  |
|  | How-to videos                      | 4     | 13%                  |
| 8. Are you familiar with any of these                                      | Community events / fairs           | 1     | 3%                   |
| outreach methods from Energy   | Home shows                         | 5     | 17%                  |
| Efficiency Arkansas or the Tighten Up                                      | Trainings                          | 3     | 10%                  |
| campaign from 2016 until now?  | Word of mouth                      | 1     | 3%                   |
|  | Email                              | 1     | 3%                   |
|  | Mailings                           | 2     | 7%                   |
|  | Internet/Website                   | 1     | 3%                   |
|  | Other                              | 0     | 0%                   |
|  | Don't Know                         | 0     | 0%                   |
|  | Refused                            | 0     | 0%                   |
|  |                                    |       |                      |
| 9. Before this call today, were you aware that you can learn energy saving | Response                           | Count | Percent<br>(n = 200) |
| tips from the Energy Efficiency  | Yes                                | 41    | 21%                  |
| Arkansas website or call the toll-free                                     | No                                 | 154   | 77%                  |
| number to have an information packet                                       | Don't know                         | 5     | 3%                   |
| sent to your home?   | Refused                            | 0     | 0%                   |

| 10. Have you visited the Energy Efficiency Arkansas Website? | Response   | Count | Percent<br>(n = 200) |
|--|------------|-------|----------------------|
|  | Yes        | 12    | 6%                   |
|  | No         | 186   | 93%                  |
|  | Don't know | 2     | 1%                   |
|  | Refused    | 0     | 0%                   |

|                                     | Response                                   | Count | Percent<br>(n = 12) |
|-------------------------------------|--|-------|---------------------|
|                                     | Past 6 months                              | 6     | 50%                 |
|                                     | 6 to 12 months ago                         | 4     | 33%                 |
| 11. When did you last access the    | More than 1 year ago but less than 2 years |       |                     |
| Energy Efficiency Arkansas website? | ago  | 0     | 0%                  |
|                                     | 2 or more years ago                        | 1     | 8%                  |
|                                     | Other                                      | 1     | 8%                  |
|                                     | Don't Know                                 | 0     | 0%                  |
|                                     | Refused                                    | 0     | 0%                  |

|   | Response                             | Count | Percent<br>(n = 11) |
|---|--------------------------------------|-------|---------------------|
|   | Incentives/rebates information       | 3     | 27%                 |
|   | Reach my utility's webpage           | 0     | 0%                  |
|   | Events/training calendar             | 0     | 0%                  |
| 12 Why did you visit the Energy                               | Videos about energy efficiency       | 0     | 0%                  |
| 12. Why did you visit the Energy Efficiency Arkansas website? | Fact sheets about how to save energy | 1     | 9%                  |
|   | Energy savings calculator            | 0     | 0%                  |
|   | Learn more about the program/website |       |                     |
|   | content                              | 3     | 27%                 |
|   | Other                                | 1     | 9%                  |
|   | Don't Know                           | 3     | 27%                 |
|   | Refused                              | 0     | 0%                  |

|   | Response   | Count | Percent<br>(n = 12) |
|---|------------|-------|---------------------|
| 12 How difficult or copy was it to  | 1          | 0     | 0%                  |
| 13. How difficult or easy was it to navigate the Energy Efficiency                                  | 2          | 0     | 0%                  |
| Arkansas website? Use a scale of 1 to 5, with 1 meaning "very difficult" and 5 meaning "very easy". | 3          | 2     | 17%                 |
|   | 4          | 3     | 25%                 |
|   | 5          | 6     | 50%                 |
|   | Don't Know | 1     | 8%                  |
|   | Refused    | 0     | 0%                  |

|   | Response   | Count | Percent<br>(n = 12) |
|---|------------|-------|---------------------|
| 14. How well did the information you  | 1          | 0     | 0%                  |
| found on the Energy Efficiency Arkansas website meet your needs?                            | 2          | 0     | 0%                  |
| Use a scale of 1 to 5, with 1 meaning "did not meet at all" and 5 meaning "completely met". | 3          | 1     | 8%                  |
|   | 4          | 5     | 42%                 |
|   | 5          | 5     | 42%                 |
|   | Don't Know | 1     | 8%                  |
|   | Refused    | 0     | 0%                  |

|                                      | Response                             | Count | Percent<br>(n = 11) |
|--------------------------------------|--------------------------------------|-------|---------------------|
|                                      | Incentives/rebates information       | 1     | 9%                  |
|                                      | Locate my utility's webpage          | 0     | 0%                  |
| 16. What do you find most useful     | Events/training calendar             | 0     | 0%                  |
| about the Energy Efficiency Arkansas | Videos about energy efficiency       | 0     | 0%                  |
| website?                             | Fact sheets about how to save energy | 3     | 27%                 |
|                                      | Energy savings calculator            | 0     | 0%                  |
|                                      | Other                                | 4     | 36%                 |
|                                      | Don't Know                           | 3     | 27%                 |
|                                      | Refused                              | 0     | 0%                  |

| 17. Are you aware of any utility                                      | Response   | Count | Percent<br>(n = 200) |
|---|------------|-------|----------------------|
| sponsored rebates for energy efficient                                | Yes        | 59    | 30%                  |
| equipment, home improvements or other services to help customers save | No         | 139   | 70%                  |
| energy offered by a gas or electric                                   | Don't know | 2     | 1%                   |
| utility?  | Refused    | 0     | 0%                   |

|   | Response                          | Count | Percent<br>(n = 62) |
|---|-----------------------------------|-------|---------------------|
|   | AEP/Southwestern Electric         |       |                     |
|   | Power/SWEPCO                      | 6     | 10%                 |
|   | AOG                               | 0     | 0%                  |
|   | CenterPoint                       | 7     | 11%                 |
| 18. Which utilities provide the rebates | Empire Electric                   | 0     | 0%                  |
| that you recall hearing about?          | Entergy                           | 17    | 27%                 |
|   | OG&E                              | 2     | 3%                  |
|   | Black Hills Energy                | 2     | 3%                  |
|   | Electric Cooperatives of Arkansas | 2     | 3%                  |
|   | Other                             | 11    | 18%                 |
|   | Don't Know                        | 15    | 24%                 |
|   | Refused                           | 0     | 0%                  |

|  | Response  | Count | Percent<br>(n = 58) |
|--|---|-------|---------------------|
|  | Heating and cooling equipment   | 20    | 34%                 |
|  | Appliances such as refrigerators, clothes washers Home weatherization improvements such | 8     | 14%                 |
|  | as air or duct sealing  | 7     | 12%                 |
| 10.14  | Discounts for efficient lighting  | 7     | 12%                 |
| 19. What types of rebates do you recall hearing about? | Low flow faucet aerators or showerheads   | 4     | 7%                  |
| meaning about.   | Building envelope (windows/insulation)  | 1     | 2%                  |
|  | Solar   | 1     | 2%                  |
|  | Water heater  | 1     | 2%                  |
|  | Audits  | 1     | 2%                  |
|  | Other   | 7     | 12%                 |
|  | Don't Know  | 18    | 31%                 |
|  | Refused   | 0     | 0%                  |

|   | Response  | Count | Percent<br>(n = 64) |
|---|---|-------|---------------------|
|   | Information that came in the mail               | 15    | 23%                 |
|   | Email   | 1     | 2%                  |
|   | TV ad   | 6     | 9%                  |
|   | Radio ad  | 0     | 0%                  |
|   | Website   | 1     | 2%                  |
|   | Energy Efficiency Arkansas website              | 2     | 3%                  |
| 20 Have did you began of these maketes              | Social media                                    | 0     | 0%                  |
| 20. How did you learn of these rebates or services? | Energy Efficiency Arkansas Facebook post        | 0     | 0%                  |
|   | Newspaper or magazine article                   | 7     | 11%                 |
|   | Contractor                                      | 2     | 3%                  |
|   | Word of mouth from friends, relatives or others | 11    | 17%                 |
|   | Utility bill message                            | 6     | 9%                  |
|   | Utility program staff                           | 2     | 3%                  |
|   | Other   | 5     | 8%                  |
|   | Don't Know                                      | 6     | 9%                  |
|   | Refused   | 0     | 0%                  |

| 21. Have you received a utility rebate                                | Response   | Count | Percent<br>(n = 200) |
|---|------------|-------|----------------------|
| for installing energy efficient equipment or making energy efficiency | Yes        | 16    | 8%                   |
| improvements at this residence in the                                 | No         | 180   | 90%                  |
| last five years?  | Don't know | 2     | 1%                   |
|   | Refused    | 2     | 1%                   |

|  | Response  | Count | Percent<br>(n = 17) |
|--|---|-------|---------------------|
|  | Heating and cooling equipment   | 3     | 18%                 |
| 22. For what types of equipment or     | Appliances such as refrigerators, clothes washers Home weatherization improvements such | 4     | 24%                 |
| improvements did you receive a utility | as air or duct sealing  | 2     | 12%                 |
| rebate? [MARK ALL THAT APPLY]          | Discounts for efficient lighting  | 0     | 0%                  |
|  | Low flow faucet aerators or showerheads   | 0     | 0%                  |
|  | Other   | 5     | 29%                 |
|  | Don't Know  | 3     | 18%                 |
|  | Refused   | 0     | 0%                  |

|  | Response   | Count | Percent<br>(n = 200) |
|--|------------|-------|----------------------|
| 23. Overall, on a scale of "1 to 5"  | 1          | 34    | 17%                  |
| where "1" means "Not at all  | 2          | 23    | 12%                  |
| knowledgeable" and "5" means "Very knowledgeable," how knowledgeable are you about ways to save energy in your home? | 3          | 61    | 31%                  |
|  | 4          | 36    | 18%                  |
|  | 5          | 34    | 17%                  |
|  | Don't Know | 10    | 5%                   |
|  | Refused    | 2     | 1%                   |

|  | Response   | Count | Percent<br>(n = 200) |
|--|------------|-------|----------------------|
| 24. How would you rate your  | 1          | 17    | 9%                   |
| household's efforts to save energy in  | 2          | 19    | 10%                  |
| your home? Please use a scale where 1 means "you have not done much" and 5 means you have "done almost everything you can" to save energy. | 3          | 66    | 33%                  |
|  | 4          | 43    | 22%                  |
|  | 5          | 38    | 19%                  |
|  | Don't Know | 13    | 7%                   |
|  | Refused    | 4     | 2%                   |

|   | Response                                 | Count | Percent<br>(n = 160) |
|---|--|-------|----------------------|
|   | Reduce energy costs / reduce energy bill | 126   | 79%                  |
| 25. What motivated you to save energy in your home? | Conservation / good for environment      | 19    | 12%                  |
|   | Make my usage more like my neighbors     | 1     | 1%                   |
|   | Other                                    | 11    | 7%                   |
|   | Don't Know                               | 2     | 1%                   |
|   | Refused                                  | 1     | 1%                   |

|  | Response   | Count | Percent<br>(n = 205) |
|--|--|-------|----------------------|
|  | Internet search (e.g., Google)   | 80    | 39%                  |
|  | Energy Efficiency Arkansas website   | 20    | 10%                  |
|  | Energy Efficiency Arkansas toll free<br>telephone number<br>Visit a booth at a home improvement        | 7     | 3%                   |
| 26. If you were interested in learning                       | store / community fair   | 2     | 1%                   |
| more about how you could save                                | Television/radio ads   | 12    | 6%                   |
| energy in your home, what information sources would you use? | Request a packet of energy saving tips be sent to your home Sign up for monthly email / text from your | 15    | 7%                   |
|  | utility  | 4     | 2%                   |
|  | Social media (Twitter/Facebook, etc.)  | 1     | 0%                   |
|  | Other  | 21    | 10%                  |
|  | Don't Know   | 37    | 18%                  |
|  | Refused  | 6     | 3%                   |

|                                     | Response   | Count | Percent<br>(n = 192) |
|-------------------------------------|--|-------|----------------------|
|                                     | Landlord makes those decisions   | 7     | 4%                   |
|                                     | Home is already efficient  | 9     | 5%                   |
| 27. What challenges, if any, do you | Lack of cooperation from other household members Unsure of what would make home more | 7     | 4%                   |
| face in saving energy in your home? | efficient  | 8     | 4%                   |
| G G, ,                              | Too expensive  | 25    | 13%                  |
|                                     | Habits are difficult to change   | 5     | 3%                   |
|                                     | No challenges  | 81    | 42%                  |
|                                     | Other  | 20    | 10%                  |
|                                     | Don't Know   | 28    | 15%                  |
|                                     | Refused  | 2     | 1%                   |

| 28. In the last two years, did you                                   | Response   | Count | Percent<br>(n = 200) |
|--|------------|-------|----------------------|
| purchase any energy efficient  | Yes        | 84    | 42%                  |
| equipment or make energy efficiency upgrades to your home that would | No         | 101   | 51%                  |
| reduce your energy usage?  | Don't know | 7     | 4%                   |
|  | Refused    | 8     | 4%                   |

|  | Response   | Count | Percent<br>(n = 136) |
|--|--|-------|----------------------|
|  | Replaced an air conditioner/HVAC unit (AC, heat pump, window unit)                         | 21    | 15%                  |
|  | Tuned-up or serviced an air conditioner/HVAC unit Installed and/or replaced an evaporative | 3     | 2%                   |
|  | cooler   | 2     | 1%                   |
|  | CFLs/compact fluorescent lighting  | 2     | 1%                   |
|  | LED bulbs  | 15    | 11%                  |
|  | Clothes washer   | 12    | 9%                   |
|  | Clothes dryer  | 12    | 9%                   |
|  | Dishwasher   | 5     | 4%                   |
|  | Furnace fan  | 1     | 1%                   |
|  | Other fans (whole-house, attic fan, box  |       |                      |
| 29. What purchases or upgrades did     | fans, ceiling fans)  | 3     | 2%                   |
| you make in the last two years? Please | Refrigerator   | 16    | 12%                  |
| only include purchase or upgrades that | Freezer  | 2     | 1%                   |
| would reduce your energy usage.        | Pool equipment – heaters, pumps, variable speed drives or controls                         | 0     | 0%                   |
|  | Programmable thermostat  | 1     | 1%                   |
|  | Smart thermostat / Wi-Fi thermostat /  | 1     | 170                  |
|  | NEST / Ecobee  | 2     | 1%                   |
|  | Water heater – storage tank, tankless,   |       | _                    |
|  | heat pump water heater Windows – double pane, triple pane, low-                            | 7     | 5%                   |
|  | e windows, storm windows   | 7     | 5%                   |
|  | Solar screens  | 1     | 1%                   |
|  | Efficient electronics  | 0     | 0%                   |
|  | Insulation (attic insulation, wall insulation,   |       |                      |
|  | floor insulation)  | 9     | 7%                   |
|  | Solar panels / solar PV  | 0     | 0%                   |
|  | Other  | 14    | 10%                  |
|  | Don't Know   | 1     | 1%                   |
|  | Refused  | 0     | 0%                   |

| 30. Did you consider any information                                   | Response   | Count | Percent<br>(n = 84) |
|--|------------|-------|---------------------|
| provided by Energy Efficiency Arkansas                                 | Yes        | 10    | 12%                 |
| when making the decision to purchase the energy efficient equipment or | No         | 66    | 79%                 |
| make the energy efficiency upgrade?                                    | Don't know | 8     | 10%                 |
|  | Refused    | 0     | 0%                  |

|  | Response   | Count | Percent<br>(n = 10) |
|--|------------|-------|---------------------|
| 31. How important was the  | 1          | 0     | 0%                  |
| information provided by Energy Efficiency Arkansas in your decision to | 2          | 0     | 0%                  |
| make those energy efficiency   | 3          | 2     | 20%                 |
| improvements? Please use a scale                                       | 4          | 2     | 20%                 |
| where 1 means "not at all important" and 5 means "very important."     | 5          | 4     | 40%                 |
| and 5 means very important.  | Don't Know | 2     | 20%                 |
|  | Refused    | 0     | 0%                  |

| 32. In the last two years, have you made any changes in your energy use habits that would conserve energy in your home? | Response   | Count | Percent<br>(n = 200) |
|---|------------|-------|----------------------|
|   | Yes        | 87    | 44%                  |
|   | No         | 103   | 52%                  |
|   | Don't know | 2     | 1%                   |
|   | Refused    | 8     | 4%                   |

|                                      | Response   | Count | Percent<br>(n = 128) |
|--------------------------------------|--|-------|----------------------|
|                                      | Turned up the thermostat in summer to reduce AC use                                | 27    | 21%                  |
|                                      | Turned down the thermostat in winter to reduce heating use                         | 13    | 10%                  |
|                                      | Changed AC filter  | 3     | 2%                   |
|                                      | Changed furnace filter   | 0     | 0%                   |
|                                      | Clear areas around heating/cooling vents   | 3     | 2%                   |
|                                      | Turned off lights in unoccupied rooms  | 37    | 29%                  |
|                                      | Line-dry clothes   | 0     | 0%                   |
|                                      | Run clothes washer with full load  | 2     | 2%                   |
|                                      | Run dishwasher with full load  | 2     | 2%                   |
|                                      | Used cold water setting on clothes washer  | 1     | 1%                   |
|                                      | Used cold water setting on dishwasher  | 0     | 0%                   |
| 33. What actions or changes have you | Unplug electronics when not in use   | 6     | 5%                   |
| made?                                | Turn off computers overnight   | 3     | 2%                   |
|                                      | Take shorter showers   | 1     | 1%                   |
|                                      | Turned down water heater setpoint  | 1     | 1%                   |
|                                      | Sealed leaks and drafts  | 2     | 2%                   |
|                                      | Cleaned refrigerator coils   | 1     | 1%                   |
|                                      | Increased refrigerator/freezer temperature Used heat blocking materials on windows | 3     | 2%                   |
|                                      | / shaded windows during hot daytime  | 1     | 1%                   |
|                                      | Increased use of fans to reduce use of AC Increased use of alternative heating     | 3     | 2%                   |
|                                      | system (wood stove, fire place) Shifted use off-peak (e.g., avoided use of         | 1     | 1%                   |
|                                      | laundry/electronics/ during peak time)   | 2     | 2%                   |
|                                      | Other  | 15    | 12%                  |
|                                      | Don't Know   | 1     | 1%                   |
|                                      | Refused  | 0     | 0%                   |

| 34. Did you consider any information   | Response   | Count | Percent<br>(n = 87) |
|--|------------|-------|---------------------|
| provided by Energy Efficiency Arkansas | Yes        | 14    | 16%                 |
| when deciding to take those actions to | No         | 67    | 77%                 |
| save energy?                           | Don't know | 6     | 7%                  |
|  | Refused    | 0     | 0%                  |

| 35. How important was the  | Response | Count | Percent<br>(n = 14) |
|--|----------|-------|---------------------|
| information provided by Energy   | 1        | 0     | 0%                  |
| Efficiency Arkansas in your decision to                                  | 2        | 1     | 7%                  |
| take those actions to save energy? Please use a scale where 1 means "not | 3        | 4     | 29%                 |
| at all important" and 5 means "very                                      | 4        | 4     | 29%                 |
| important."  | 5        | 5     | 36%                 |
|  | 98       | 0     | 0%                  |
|  | 99       | 0     | 0%                  |

| 26. Do you have plans to make any                                    | Response   | Count | Percent<br>(n = 200) |
|--|------------|-------|----------------------|
| 36. Do you have plans to make any energy-efficiency upgrades to your | Yes        | 40    | 20%                  |
| home in the next 12 months?  | No         | 138   | 69%                  |
|  | Don't know | 13    | 7%                   |
|  | Refused    | 9     | 5%                   |

|  | Response   | Count | Percent<br>(n = 51) |
|--|--|-------|---------------------|
|  | Replace an air conditioner/HVAC unit (AC, heat pump, window unit) Tune-up or serviced an air | 6     | 12%                 |
|  | conditioner/HVAC unit Install and/or replace an evaporative                                  | 0     | 0%                  |
|  | cooler   | 0     | 0%                  |
|  | CFLs/compact fluorescent lighting  | 0     | 0%                  |
|  | LED bulbs  | 6     | 12%                 |
|  | Clothes washer   | 1     | 2%                  |
|  | Clothes dryer  | 1     | 2%                  |
|  | Dishwasher   | 1     | 2%                  |
|  | Furnace fan  | 0     | 0%                  |
|  | Other fans (whole-house, attic fan, box  | 1     | 2%                  |
| 37. What purchases or upgrades did you plan on making in the next 12 | fans, ceiling fans) Refrigerator   | 0     | 2%<br>0%            |
| months? Please only include purchase                                 |  | 0     | 0%                  |
| or upgrades that would reduce your                                   | Freezer  Pool equipment – heaters, pumps,  | U     | 0%                  |
| energy usage.  | variable speed drives or controls  | 1     | 2%                  |
|  | Programmable thermostat  | 0     | 0%                  |
|  | Smart thermostat / Wi-Fi thermostat /  |       |                     |
|  | NEST / Ecobee  | 1     | 2%                  |
|  | Water heater – storage tank, tankless, heat pump water heater                                | 2     | 4%                  |
|  | Windows – double pane, triple pane, low-   | _     | .,,                 |
|  | e windows, storm windows   | 7     | 14%                 |
|  | Solar screens  | 1     | 2%                  |
|  | Efficient electronics  | 0     | 0%                  |
|  | Insulation (attic insulation, wall insulation, floor insulation)                             | 4     | 8%                  |
|  | Solar panels / solar PV  | 2     | 4%                  |
|  | Other  | 11    | 22%                 |
|  | Don't Know   | 6     | 12%                 |
|  | Refused  | 0     | 0%                  |

|  | Response  | Count     | Percent<br>(n = 200) |
|--|---|-----------|----------------------|
|  | Manufactured home   | 25        | 13%                  |
| 38. Which of the following best describes your home? Is it a | Single-family house detached from any other house Single family house attached to one or more other houses, for example, duplex, row house, or townhome | 135<br>10 | 68%<br>5%            |
|  | Apartment in a building with 2 to 3 units   | 5         | 3%                   |
|  | Apartment in a building with 4 or more units  | 4         | 2%                   |
|  | Other   | 4         | 2%                   |
|  | Don't Know  | 3         | 2%                   |
|  | Refused   | 14        | 7%                   |

|   | Response                          | Count | Percent<br>(n = 233) |
|---|-----------------------------------|-------|----------------------|
|   | AEP/Southwestern Electric         |       |                      |
|   | Power/SWEPCO                      | 13    | 6%                   |
|   | AOG                               | 2     | 1%                   |
|   | CenterPoint                       | 31    | 13%                  |
| 39. From which utilities do you receive | Empire Electric                   | 3     | 1%                   |
| energy bills?                           | Entergy                           | 79    | 34%                  |
|   | OG&E                              | 6     | 3%                   |
|   | Black Hills Energy                | 10    | 4%                   |
|   | Electric Cooperatives of Arkansas | 11    | 5%                   |
|   | Other                             | 44    | 19%                  |
|   | Don't Know                        | 20    | 9%                   |
|   | Refused                           | 14    | 6%                   |

| 40. Do you own or rent the home in which you live? | Response   | Count | Percent<br>(n = 200) |
|--|------------|-------|----------------------|
|  | Own        | 155   | 78%                  |
|  | Rent       | 28    | 14%                  |
|  | Don't know | 3     | 2%                   |
|  | Refused    | 14    | 7%                   |

|                                     | Response   | Count | Percent<br>(n = 200) |
|-------------------------------------|------------|-------|----------------------|
|                                     | 18-24      | 9     | 5%                   |
|                                     | 25-34      | 12    | 6%                   |
| 41. Which of the following brackets | 35-44      | 21    | 11%                  |
| contains your age?                  | 45-56      | 32    | 16%                  |
|                                     | 55-64      | 24    | 12%                  |
|                                     | 65 or over | 84    | 42%                  |
|                                     | Don't know | 2     | 1%                   |
|                                     | Refused    | 16    | 8%                   |

| 42. Are any members of your household aged 65 years or older? | Response | Count | Percent<br>(n = 200) |
|---|----------|-------|----------------------|
|   | Yes      | 86    | 43%                  |
|   | No       | 98    | 49%                  |
|   | Refused  | 16    | 8%                   |

|   | Response   | Count | Percent<br>(n = 200) |
|---|------------|-------|----------------------|
|   | 1          | 35    | 18%                  |
|   | 2          | 80    | 40%                  |
|   | 3          | 37    | 19%                  |
|   | 4          | 15    | 8%                   |
|   | 5          | 6     | 3%                   |
| 43. How many people live in your household full time? | 6          | 3     | 2%                   |
|   | 7          | 1     | 1%                   |
|   | 8          | 0     | 0%                   |
|   | 9          | 0     | 0%                   |
|   | 10         | 0     | 0%                   |
|   | 11         | 0     | 0%                   |
|   | 12         | 0     | 0%                   |
|   | Don't know | 2     | 1%                   |
|   | Refused    | 21    | 11%                  |

|   | Response   | Count | Percent<br>(n = 177) |
|---|------------|-------|----------------------|
| 44. Is your pre-tax annual household          | Larger     | 93    | 53%                  |
| income larger or smaller than [CUTOFF INCOME] | Smaller    | 41    | 23%                  |
| integrine]                                    | Don't know | 22    | 12%                  |
|   | Refused    | 21    | 12%                  |

|  | Response            | Count | Percent<br>(n = 66) |
|--|---------------------|-------|---------------------|
| AF I'm pring to used off a list of                                       | Less than \$25,000  | 3     | 5%                  |
| 45. I'm going to read off a list of income ranges, please indicate which | \$25,000 - \$49,999 | 3     | 5%                  |
| range your total pre-tax household                                       | \$50,000 – \$74,999 | 0     | 0%                  |
| income falls. This is the total annual income of your household:         | \$75,000 - \$99,999 | 1     | 2%                  |
|  | \$100,000-\$149,999 | 0     | 0%                  |
|  | \$150,000 or above  | 0     | 0%                  |
|  | Don't know          | 13    | 20%                 |
|  | Refused             | 46    | 70%                 |

|   | Response  | Count | Percent<br>(n = 200) |
|---|---|-------|----------------------|
|   | Up to 8th grade   | 0     | 0%                   |
|   | Some high school  | 4     | 2%                   |
| 46. What's the highest level of                     | High school or GED equivalent                             | 38    | 19%                  |
| education a member of your household has completed? | Some college  | 51    | 26%                  |
|   | Associate's degree  | 19    | 10%                  |
|   | Bachelor's college degree<br>Graduate degree/professional | 33    | 17%                  |
|   | degree/JD/MD  | 30    | 15%                  |
|   | Don't know  | 2     | 1%                   |
|   | Refused   | 23    | 12%                  |

| 47. [INTERVIEWER: RECORD RESPONDENT'S GENDER. DO NOT ASK] | Response   | Count | Percent<br>(n = 200) |
|---|------------|-------|----------------------|
|   | Male       | 85    | 43%                  |
|   | Female     | 108   | 54%                  |
|   | Don't know | 7     | 4%                   |

## Appendix D. Trainee Survey Respondent Characteristics

The trainings attended by the respondents are listed in Table A-1. As shown, the trainings attended by respondents covered several classes offered by EEA.

Table D-1: 2016 Trainings Attended by Respondents

| Seminar   | Percent<br>(n = 39)  |
|---|----------------------|
| Auditing Seminar  | 18%                  |
| Fundamentals of Lighting Efficiency   | 18%                  |
| Advanced Lighting Efficiency  | 15%                  |
| Building Tune-ups   | 15%                  |
| Auditing for HVAC   | 10%                  |
| Comprehensive Training for Energy Mangers   | 8%                   |
| Foundations of Industrial Energy Efficiency   | 5%                   |
| Fundamentals of Compressed Air  | 5%                   |
| Fundamentals of Energy Auditing   | 5%                   |
| Note: The total count exceeds the respondent number as participle give several answers. | cipants were able to |

The respondents' professional categories are reported in Table D-2. The nine people who selected "Contractor or energy services provider" (n=4) or "A staff person at a commercial or industrial facility" (n=5) were asked an additional question battery as explained in section 7.5.3.

Table D-2: Work Role in 2016

| 2016 Professional Role   | Percent<br>(n = 26) |
|--|---------------------|
| Utility or utility program implementation staff member   | 50%                 |
| Contractor or energy services provider   | 15%                 |
| A staff person at a commercial or industrial facility (e.g., building operator, maintenance manager, facility staff) | 19%                 |
| APSC Staff member  | 4%                  |
| Consultant in Energy Efficiency  | 4%                  |
| Education  | 4%                  |
| AAEE member  | 4%                  |

Current job titles were recorded for past trainees (see Table D-3).

Table D-3: Current Job Title

| Current Role                           | Count |
|--|-------|
| Other manager, team leader, supervisor | 4     |
| Engineer                               | 5     |
| Engineering Manager                    | 3     |
| Account manager                        | 2     |
| BAS Tech                               | 1     |
| Energy Analyst/Auditor                 | 2     |
| Facilities/Maintenance Manager         | 2     |
| C&I EE Program Coordinator             | 1     |
| Education                              | 1     |
| Lead Program Manager, Utility          | 1     |
| Retired                                | 1     |
| Professor, facilitator                 | 1     |
| Program Consultant                     | 1     |
| Rate Analyst                           | 1     |

Respondents indicated their work sector in Table D-4.

Table D-4: Current Employment Sector

| Response | Percent<br>(n = 26) |
|----------|---------------------|
| Public   | 42%                 |
| Private  | 58%                 |

Additional information gathered included how long survey-takers had worked in their current roles (see Figure D-1)

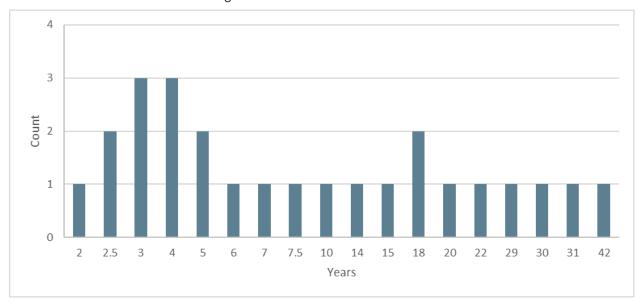


Figure D-1: Years in Current Role

## Appendix E. Trainee Survey Tabulations

| TOPOLIGIA E. Trailice         |   |       |                     |
|-------------------------------|---|-------|---------------------|
|                               | Response                                    | Count | Percent<br>(n = 39) |
|                               | Advanced Lighting Efficiency                | 6     | 15%                 |
|                               | Auditing for HVAC                           | 4     | 10%                 |
|                               | Auditing Seminar                            | 7     | 18%                 |
| Trainings / Seminars Attended | Building Tune-ups                           | 6     | 15%                 |
|                               | Comprehensive Training for Energy Mangers   | 3     | 8%                  |
|                               | Foundations of Industrial Energy Efficiency | 2     | 5%                  |
|                               | Fundamentals of Compressed Air              | 2     | 5%                  |
|                               | Fundamentals of Energy Auditing             | 2     | 5%                  |
|                               | Fundamentals of Lighting Efficiency         | 7     | 18%                 |
|                               |   |       |                     |
| Auditing Training Attended    | Response                                    | Count | Percent<br>(n = 26) |
|                               | Yes   | 15    | 58%                 |
|                               | No  | 11    | 42%                 |

|   | Response                                   | Count | Percent<br>(n = 33) |
|---|--|-------|---------------------|
|   | Energy Efficiency Arkansas flyer           | 5     | 15%                 |
|   | Through the Arkansas Association of Energy |       |                     |
|   | Engineers                                  | 11    | 33%                 |
| How did you learn about the seminar(s)? | Through another professional group         | 0     | 0%                  |
|   | Email message                              | 10    | 30%                 |
|   | Social media (Facebook, LinkedIn)          | 0     | 0%                  |
|   | Someone in your company at the time        | 5     | 15%                 |
|   | Other - please specify                     | 2     | 6%                  |
|   | Don't recall                               | 0     | 0%                  |

|  | Response  | Count | Percent<br>(n = 26) |
|--|---|-------|---------------------|
| Which of the following best describes your | Utility or utility program implementation staff member                                      | 13    | 50%                 |
| professional role at the time of the       | Contractor or energy services provider  | 4     | 15%                 |
| training?                                  | A staff person at a commercial or industrial facility (e.g., building operator, maintenance |       |                     |
|  | manager, facility staff)  | 5     | 19%                 |
|  | Other (Please specify)  | 4     | 15%                 |

|   | T                                       |       |                     |
|---|---|-------|---------------------|
|   | Response                                | Count | Percent<br>(n = 55) |
|   | Expand technical knowledge              | 23    | 42%                 |
| What motivated you to sign up for the   | Improve qualifications                  | 10    | 18%                 |
| training?   | Personal interest                       | 7     | 13%                 |
|   | Required by employer                    | 2     | 4%                  |
|   | Learn about energy efficiency programs  | 7     | 13%                 |
|   | Network with others                     | 6     | 11%                 |
|   | Network with others                     |       | 11/0                |
|   | _                                       |       | Percent             |
|   | Response                                | Count | (n = 26)            |
| Overall, how useful do you think your   | Very useful                             | 18    | 69%                 |
| training was?   | Somewhat useful                         | 4     | 15%                 |
|   | Slightly useful                         | 4     | 15%                 |
|   | Not at all useful                       | 0     | 0%                  |
|   |   | 1     | u u                 |
|   | Pagnanga                                | Count | Percent             |
|   | Response                                | Count | (n = 26)            |
| What did you find most useful about the                                       | Technical information                   | 16    | 62%                 |
| training?   | New advances in energy efficiency       | 4     | 15%                 |
|   | Earning certification                   | 5     | 19%                 |
|   | Do not remember                         | 1     | 4%                  |
|   |   |       |                     |
| Dries to attending the cominer had you  | Response                                | Count | Percent             |
| Prior to attending the seminar, had you completed energy audits of commercial | Kesponse                                | Count | (n =15)             |
| facilities?   | Yes                                     | 8     | 53%                 |
| ruemties:   | No                                      | 7     | 47%                 |
|   |   |       |                     |
|   | Response                                | Count | Percent             |
| Have you completed any commercial   |   |       | (n = 14)            |
| building audits since completing the  | Yes, at facilities that I own or manage | 2     | 14%                 |
| training?   | Yes, at client facilities               | 6     | 43%                 |
|   | No, have not completed any audits       | 6     | 43%                 |
|   | T                                       | 1     |                     |
| We would like to understand how the   | Response                                | Count | Percent             |
| training may have impacted the building                                       | ·                                       |       | (n =8)              |
| audits you perform. Using a scale where 0                                     | 0 (No impact)                           | 1     | 13%                 |
| means "no impact at all" and 5 means a  | 1                                       | 1     | 13%                 |
| "large impact," how much did the training                                     | 2                                       | 1     | 13%                 |
| impact the following: The number of audits you complete in a                  | 3                                       | 2     | 25%                 |
| year  | 4                                       | 2     | 25%                 |
| year  | 5 (Large impact)                        | 1     | 13%                 |

| We would like to understand how the training may have impacted the building | Response         | Count | Percent<br>(n =8) |
|---|------------------|-------|-------------------|
| audits you perform. Using a scale where 0                                   | 0 (No impact)    | 1     | 13%               |
| means "no impact at all" and 5 means a                                      | 1                | 1     | 13%               |
| "large impact," how much did the training                                   | 2                | 1     | 13%               |
| impact the following:   | 3                | 0     | 0%                |
| The number and type of systems included                                     | 4                | 4     | 50%               |
| in an audit   | 5 (Large impact) | 1     | 13%               |

| We would like to understand how the training may have impacted the building | Response         | Count | Percent<br>(n =8) |
|---|------------------|-------|-------------------|
| audits you perform. Using a scale where 0                                   | 0 (No impact)    | 1     | 13%               |
| means "no impact at all" and 5 means a                                      | 1                | 1     | 13%               |
| "large impact," how much did the training                                   | 2                | 1     | 13%               |
| impact the following:   | 3                | 0     | 0%                |
| The types of energy efficiency improvements you typically identify          | 4                | 2     | 25%               |
| through an audit  | 5 (Large impact) | 3     | 38%               |

| We would like to understand how the training may have impacted the building | Response         | Count | Percent<br>(n =7) |
|---|------------------|-------|-------------------|
| audits you perform. Using a scale where 0                                   | 0 (No impact)    | 1     | 13%               |
| means "no impact at all" and 5 means a                                      | 1                | 1     | 13%               |
| "large impact," how much did the training                                   | 2                | 0     | 0%                |
| impact the following:   | 3                | 1     | 13%               |
| The use of engineering analysis of energy                                   | 4                | 1     | 13%               |
| saving impacts in audits  | 5 (Large impact) | 3     | 38%               |

| We would like to understand how the training may have impacted the building | Response         | Count | Percent<br>(n =7) |
|---|------------------|-------|-------------------|
| audits you perform. Using a scale where 0                                   | 0 (No impact)    | 1     | 13%               |
| means "no impact at all" and 5 means a                                      | 1                | 1     | 13%               |
| "large impact," how much did the training                                   | 2                | 0     | 0%                |
| impact the following:   | 3                | 1     | 13%               |
| The use of financial analysis in energy                                     | 4                | 1     | 13%               |
| audits  | 5 (Large impact) | 3     | 38%               |

|   | Response                                       | Count | Percent<br>(n = 38) |
|---|--|-------|---------------------|
|   | Installed lighting controls                    | 3     | 8%                  |
|   | Installed energy efficient lighting            | 7     | 18%                 |
|   | Installed NEMA premium energy efficient        |       |                     |
|   | motors   | 0     | 0%                  |
| We would like to know if the training has   | Installed variable frequency drives (VFDs)     | 4     | 11%                 |
| lead you to make any of the following   | Completed a compressed air efficiency projects | 2     | 5%                  |
| energy efficiency improvements. Please  | Implemented an energy management               | 3     | 8%                  |
| mark any of the following actions that you  |  | _     |                     |
| have taken at your facility, or at a  | Installed high efficiency heating equipment    | 3     | 8%                  |
| customer's facility in response to the  | Installed high efficiency cooling equipment    | 4     | 11%                 |
| training you completed.   | Installed economizer(s) on an air handler      | 0     | 0%                  |
| training you completed.   | Installed high efficiency water heating        |       |                     |
|   | improvements                                   | 1     | 3%                  |
|   | Adjusted equipment schedules to run only when  |       |                     |
|   | needed   | 6     | 16%                 |
|   | Other  | 1     | 3%                  |
|   | None   | 3     | 8%                  |
|   | Don't know                                     | 1     | 3%                  |
|   |  |       |                     |
|   | Response                                       | Count | Percent<br>(n = 9)  |
| How influential was the Energy Efficiency   | Very influential                               | 2     | 22%                 |
| Arkansas training on your decision to take  | Somewhat influential                           | 6     | 67%                 |
| those energy saving actions?  | Neutral  | 0     | 0%                  |
| these shengy sarming detremen   | Not too influential                            | 1     | 11%                 |
|   | Not at all influential                         | 0     |                     |
|   | Not at an initidential                         | 0     | 0%                  |
| Did you apply for a utility rebate or   | Response                                       | Count | Percent<br>(n =9)   |
| incentive for any of those improvements   | Voc  | 0     | · ·                 |
| that you made?  | Yes  | 8     | 89%                 |
|   | No   | 1     | 11%                 |
|   | Г  | 1     |                     |
|   | Response                                       | Count | Percent<br>(n = 10) |
| From what utilities did you apply for a   | AEP/Southwestern Electric Power/SWEPCO         | 1     | 10%                 |
| rebate or incentive?  | CenterPoint                                    | 2     | 20%                 |
| repate of incentives  | Entergy  | 4     | 40%                 |
|   | OG&E   | 2     | 20%                 |
|   | Black Hills Energy                             | 1     | 10%                 |
| 1   |  |       |                     |
|   | _  |       | Percent             |
| For each of the following activities, please indicate if you have performed them differently or more frequently or both since participating in the training.  Maintenance on the cooling system | Response                                       | Count | (n =5)              |
|   | Differently                                    | 0     | 0%                  |
|   | More frequently                                | 1     | 20%                 |
|   | Both   |       |                     |
|   |  | 0     | 0%                  |
| equipment?  | No change                                      | 4     | 80%                 |
|   | Don't know                                     | 0     | 0%                  |

| For each of the following activities, please   | Res             | sponse Cour | Percent (n =5) |
|--|-----------------|-------------|----------------|
| indicate if you have performed them  | Differently     |             | 0 0%           |
| differently or more frequently or both   | More frequently |             | 1 20%          |
| since participating in the training.   | Both            |             | 0 0%           |
| Maintenance on the heating equipment?  | No change       |             | 4 80%          |
|  | Don't know      |             | 0 0%           |
|  |                 |             |                |
| For each of the following activities, please   | Res             | sponse      | Percent (n =5) |
| indicate if you have performed them  | Differently     |             | 0 0%           |
| differently or more frequently or both   | More frequently |             | 2 40%          |
| since participating in the training.   | Both            |             | 0 0%           |
| Motor maintenance, including belt  | No change       |             | 3 60%          |
| alignment and tension?   | Don't know      |             | 0 0%           |
|  |                 |             |                |
| For each of the following activities, please   | Res             | sponse Cour | Percent (n =5) |
| indicate if you have performed them  | Differently     |             | 0 0%           |
| differently or more frequently or both   | More frequently |             | 0 0%           |
| since participating in the training.   | Both            |             | 1 20%          |
| Maintenance on compressed air system?  | No change       |             | 4 80%          |
|  | Don't know      |             | 0 0%           |
|  |                 |             |                |
| For each of the following activities, please   | Res             | sponse Cour | Percent (n =5) |
| indicate if you have performed them  | Differently     |             | 0 0%           |
| differently or more frequently or both   | More frequently |             | 0 0%           |
| since participating in the training.   | Both            |             | 1 20%          |
| Electrical panel maintenance?  | No change       |             | 4 80%          |
|  | Don't know      |             | 0 0%           |
|  | T               |             |                |
| For each of the following activities, please   | Res             | sponse Cour | Percent (n =5) |
| indicate if you have performed them  | Differently     |             | 0 0%           |
| differently or more frequently or both since participating in the training.  Ventilation maintenance?                      | More frequently |             | 0 0%           |
|  | Both            |             | 1 20%          |
|  | No change       |             | 4 80%          |
|  | Don't know      |             | 0 0%           |
|  | T               | 1           |                |
| Have you implemented any other energy-<br>saving maintenance activities at your<br>facility since completing the training? | Res             | sponse Cour | Percent        |
|  |                 | .,          | (n =5)         |
|  | Yes             |             | 1 20%          |
|  | No              |             | 4 80%          |

|   | T  |       | Percent  |
|---|--|-------|----------|
|   | Response                                       | Count | (n = 5)  |
| How influential was the Energy Efficiency                                   | Very influential                               | 1     | 20%      |
| Arkansas training on your decision to                                       | Somewhat influential                           | 1     | 20%      |
| improve those changes in maintenance  | Neutral  | 2     | 40%      |
| practices?  | Not too influential                            | 0     | 0%       |
|   | Not at all influential                         | 0     | 0%       |
|   | Not Applicable - did not change my maintenance |       | 0,0      |
|   | practices                                      | 1     | 20%      |
|   | 1.   | 1     | l .      |
|   | Danasa   | Ct    | Percent  |
|   | Response                                       | Count | (n = 14) |
| Compared to your knowledge of energy  | Very much                                      | 4     | 29%      |
| efficiency before the seminar, your knowledge increased                     | Somewhat                                       | 10    | 71%      |
| knowledge ilicreased  | Not at all                                     | 0     | 0%       |
|   | Don't know                                     | 0     | 0%       |
|   |  |       |          |
|   | Response                                       | Count | Percent  |
|   | Nesponse                                       | Count | (n = 10) |
|   | Changed career direction                       | 0     | 0%       |
| Have you taken any of the following   | Increased responsibility level within          |       |          |
| actions since completing the Energy   | firm/organization                              | 1     | 10%      |
| Efficiency Arkansas training?   | Disseminated lessons learned to other members  |       | 2001     |
|   | of my firm/organization                        | 9     | 90%      |
|   | Increased building safety                      | 0     | 0%       |
|   | Changed procurement process to prioritize      | 0     | 00/      |
|   | energy efficiency                              | 0     | 0%       |
|   |  |       | Percent  |
|   | Response                                       | Count | (n = 13) |
|   | Very influential                               | 0     | 0%       |
| How influential was the Energy Efficiency                                   | Somewhat influential                           | 9     | 69%      |
| Arkansas training on your decision to take                                  | Neutral  | 2     | 15%      |
| those actions?  | Not too influential                            | 1     | 8%       |
|   | Not at all influential                         | 0     | 0%       |
|   | Don't know                                     | 1     | 8%       |
|   |  |       | 0,0      |
|   | _  |       | Percent  |
| Have you encountered any barriers to applying what you learned about energy | Response                                       | Count | (n =14)  |
|   | Yes  | 2     | 14%      |
| applying what you learned about chergy                                      | 1 1 6 3  |       |          |
| efficiency improvements?  | No   | 10    | 71%      |

|   | Response  | Count | Percent<br>(n = 3)                             |
|---|---|-------|--|
|   | Lack of supervisor support  | 0     | 0%   |
|   | Insufficient budget   | 2     | 67%  |
| What barriers have you encountered?                         | Organization/company not committed to energy efficiency improvements  Not enough staff resources to plan efficiency | 0     | 0%   |
|   | projects  | 1     | 33%  |
|   | Other   | 0     | 0%   |
|   | Don't know  | 0     | 0%   |
|   | DOTT KNOW   |       | 070  |
|   | Response  | Count | Percent<br>(n = 26)                            |
| Would you like to learn about future                        | Yes   | 23    | 88%  |
| opportunities?  | No  | 2     | 8%   |
|   | Don't know  | 1     | 4%   |
|   | 2011 (1.11101)  |       | .,,,   |
|   | Response  | Count | Percent<br>(n = 24)                            |
|   | Email   | 21    | 88%  |
| What is your preferred way to learn about                   | EEA Website   | 1     | 4%   |
| future training opportunities?                              | Mail  | 0     | 0%   |
|   | Social Media  | 0     | 0%   |
|   | Other   | 2     | 8%   |
|   |   |       |  |
|   | Response  | Count | Percent<br>(n = 86)                            |
|   | Building efficiency class   | 17    | 20%  |
|   | Refrigeration   | 8     | 9%   |
| What topic areas would interest you for                     | Renewable energy  | 18    | 21%  |
| future training?  | Energy management tools   | 17    | 20%  |
|   | Basic air compressor systems  | 3     | 3%   |
|   | Electricity generation and transmission   | 7     | 8%   |
|   | Smart metering  | 15    | 17%  |
|   | Other   | 1     | 1%   |
|   |   | 1     | <u>,                                      </u> |
| What is your preferred delivery method for future training? | Response  | Count | Percent<br>(n = 35)                            |
|   | In person (1-day)   | 19    | 54%  |
|   | In person (multiple days)   | 3     | 9%   |
|   | Live webinar  | 7     | 20%  |
|   | Recorded, web-based   | 5     | 14%  |
|   | Don't know  | 1     | 3%   |

|  |  |       | T                   |
|--|--|-------|---------------------|
| How important is the tuition cost in your future likelihood to attend training?  | Response                                       | Count | Percent<br>(n = 23) |
|  | Very important                                 | 7     | 30%                 |
|  | Somewhat important                             | 13    | 57%                 |
|  | Only slightly important                        | 2     | 9%                  |
|  | Not important at all                           | 1     | 4%                  |
|  |  | •     | •                   |
|  |  |       | Percent             |
|  | Response                                       | Count | (n = 26)            |
| Have you visited the Energy Efficiency   | Yes  | 14    | 54%                 |
| Arkansas Website?  | No   | 11    | 42%                 |
|  | Don't know                                     | 1     | 42%                 |
|  | Don't know                                     | 1     | 470                 |
|  |  |       | I                   |
|  | Response                                       | Count | Percent             |
|  | ·  |       | (n = 14)            |
| When did you last access the Energy  | Past 6 months                                  | 10    | 71%                 |
| Efficiency Arkansas website?   | 6 to 12 months ago                             | 1     | 7%                  |
| ,  | More than 1 year ago but less than 2 years ago | 2     | 14%                 |
|  | 2 or more years ago                            | 0     | 0%                  |
|  | Other  | 1     | 7%                  |
|  |  |       |                     |
|  | Dannana  | C     | Percent             |
|  | Response                                       | Count | (n = 18)            |
|  | Incentives/rebates information                 | 2     | 11%                 |
| W. P. J.                                     | Reach my utility's webpage                     | 1     | 6%                  |
| Why did you visit the Energy Efficiency Arkansas website?                        | Events/training calendar                       | 10    | 56%                 |
| Arkansas websiter  | Videos about energy efficiency                 | 1     | 6%                  |
|  | Fact sheets about how to save energy           | 1     | 6%                  |
|  | Energy Savings Calculator                      | 0     | 0%                  |
|  | Other  | 3     | 17%                 |
|  | 1  |       | 1 27,70             |
|  | _  |       | Percent             |
|  | Response                                       | Count | (n = 14)            |
| How difficult or easy was it to navigate the Energy Efficiency Arkansas website? | Very Difficult                                 | 0     | 0%                  |
|  | 2  | 0     | 0%                  |
|  | 3  | 2     | 14%                 |
|  | 4  | 7     | 50%                 |
|  | Very Easy                                      | 4     | 29%                 |
|  | Don't know                                     | 1     | 7%                  |
|  | DOLLKIIOW                                      | 1     | 1 /0                |

|  | Response            | Count | Percent<br>(n =14) |
|--|---------------------|-------|--------------------|
|  | Did Not Meet At all | 0     | 0%                 |
| How well did the information you found                     | 2                   | 0     | 0%                 |
| on the Energy Efficiency Arkansas website meet your needs? | 3                   | 2     | 14%                |
|  | 4                   | 9     | 64%                |
|  | Completely Met      | 2     | 14%                |
|  | Don't Know          | 1     | 7%                 |

|  | Response                             | Count | Percent<br>(n = 13) |
|--|--------------------------------------|-------|---------------------|
|  | Incentives/rebates information       | 2     | 15%                 |
|  | Locate my utility's webpage          | 2     | 15%                 |
| What do you find most useful about the | Events/training calendar             | 7     | 54%                 |
| Energy Efficiency Arkansas website?    | Videos about energy efficiency       | 0     | 0%                  |
|  | Fact sheets about how to save energy | 0     | 0%                  |
|  | Energy savings calculator            | 0     | 0%                  |
|  | Other                                | 1     | 8%                  |
|  | Don't know                           | 1     | 8%                  |

| What is your current job title? | Response                                 | Count | Percent<br>(n = 26) |
|---------------------------------|--|-------|---------------------|
|                                 | Operations/Facilities operations manager | 0     | 0%                  |
|                                 | Maintenance manager                      | 0     | 0%                  |
|                                 | HVAC supervisor or technician            | 0     | 0%                  |
|                                 | Engineering manager                      | 3     | 12%                 |
|                                 | Facilities manager                       | 1     | 4%                  |
|                                 | Engineer                                 | 3     | 12%                 |
|                                 | General contractor                       | 0     | 0%                  |
|                                 | Building management specialist           | 0     | 0%                  |
|                                 | Other engineering position               | 0     | 0%                  |
|                                 | Other manager, team leader, supervisor   | 4     | 15%                 |
|                                 | Other                                    | 15    | 58%                 |

| Do you work in the public or private sector? | Response | Count | Percent<br>(n = 26) |
|--|----------|-------|---------------------|
|  | Public   | 11    | 42%                 |
|  | Private  | 15    | 58%                 |

|                                | Response | Count | Percent<br>(n = 25) |
|--------------------------------|----------|-------|---------------------|
| In which city/zip do you work? |          | _     | <u> </u>            |
|                                | 72032    | 1     | 4%                  |
|                                | 72110    | 1     | 4%                  |
|                                | 72201    | 3     | 12%                 |
|                                | 72202    | 5     | 20%                 |
|                                | 72204    | 2     | 8%                  |
|                                | 72205    | 1     | 4%                  |
|                                | 72223    | 1     | 4%                  |
|                                | 72403    | 1     | 4%                  |
|                                | 72703    | 3     | 12%                 |
|                                | 72764    | 1     | 4%                  |
|                                | 72801    | 1     | 4%                  |
|                                | 72908    | 3     | 12%                 |
|                                | 72936    | 1     | 4%                  |
|                                | 72956    | 1     | 4%                  |