

# Ohio EPP Process Evaluation Final Report

Prepared for the Ohio Office of Energy Efficiency  
September 2004

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## Executive Summary

Ohio's Electric Restructuring Act, passed in July 1999, created the Universal Service Fund (USF) to ensure that low-income households retain access to electric service. The Act seeks to better coordinate the Home Energy Assistance Program (HEAP), the Home Weatherization Assistance Program (HWAP), the Ohio Energy Credits Program (OEC), and the Ohio Electric Percentage of Income Payment Program (PIPP),<sup>1</sup> and creates an Electric Partnership Program (EPP) that provides baseload, weatherization, and energy education services. This report presents the findings from the third year of the Process Evaluation of the Electric Partnership Program.

### *Introduction*

The Electric Partnership Program (EPP) aims to reduce electric energy consumption of PIPP households, and reduce the growth of PIPP customers' arrears and the USF rider. To accomplish this objective, the EPP provides energy services that vary with the customer's usage level, and education services that vary with the customer's usage and payment. The basis of the Program is the installation of cost-effective energy conservation measures. Education is an important component of the Program to help customers to understand the Program, to improve measure performance, and to take energy-saving actions.

### *Evaluation Activities*

This report presents the findings and recommendations from the third year of the Process Evaluation of the Electric Partnership Program. During this time period, the following evaluation activities were undertaken.

- *Administrative Interviews:* APPRISE conducted administrative interviews with OEE staff. The purpose of these interviews was to document the changes made to the Program and to document Program operations, including quality control findings.
- *Review of Program Statistics:* APPRISE reviewed production data from SMOC~ERS and financial data from OEE. The purpose of this review was to understand trends in production and to determine whether there were areas in which production should be increased.
- *Client Interviews:* APPRISE conducted the second round of the client interviews in Fall 2003 and the third round of the client interviews in Spring 2004. The purpose of these interviews was to document education provided to clients, client retention of educational information, changes in client behavior, and client satisfaction with the Program.

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<sup>1</sup> The gas PIPP continues to be administered by the utility companies.

- *Program Data:* APPRISE is collecting data from the providers on other programs provided to EPP participants since the delivery of EPP services. After each round of the client survey, agencies are contacted to request information on other programs provided to clients who completed the interviews. These data will help to distinguish the impact of the EPP from other services that Program recipients may have received.
- *Training Observations:* APPRISE observed training on the second version of SMOC~ERS in August 2003. The purpose of these observations and interviews was to document training procedures, as well as agency responses to the training.
- *Agency Survey:* APPRISE conducted the second round of the agency survey in Fall/Winter 2003 and the third round of the agency survey in Spring 2004. The purpose of the survey was to document agency adherence to prescribed Program procedures, services delivered, and need for assistance in implementing the Program.

### *Summary of Findings*

Significant improvements have been made in the design and implementation of the Electric Partnership Program in the third year of operation. Some of the key accomplishments over the last year have been:

- Program production continued to increase in the third year of the EPP.
- Additional improvements have been made to SMOC~ERS.
- A Tablet PC has been tested and will be adopted.
- Program documentation has been improved.
- Procedures have been developed for quality control.
- An education notebook has been distributed.

The principal suggestions for continued improvements to the Program include increased production in certain utility service territories, additional education and baseload training, increased quality control, clarification of certain OEE policy guidelines, and incentives to increased refrigerator two-for-one swaps.

### **Improvements in the Third Year of the EPP**

Following a slow start and vast improvements in the second year of Program implementation, the third year has seen increased improvement and accomplishments.

- *Production has continued to increase:* Following the decrease in authorized providers from 18 to nine, there was a significant drop in production in the first quarter of the third fiscal year. However, production rebounded quickly. Production

for the third year of the Program was 9,780 jobs, compared to 7,628 in the second Program year.

- *Administrative and oversight procedures have been improved:* OEE updated and improved the EPP policies and procedures manual. They created monitoring forms to collect systematic information on agency visits, inspections, and on-site observations.
- *Cost ceilings for administrative/audit fees:* OEE set cost ceilings for the audit and administrative fees for the third year of the Program. The ceiling for baseload services was set at \$225, as compared to fees that averaged \$343 statewide, and that ranged as high as \$509 for the first two years of the Program. These new fees provide an increased cost effectiveness that benefit Ohio ratepayers.
- *New Version of SMOC~ERS:* A new version of SMOC~ERS was released in August 2003. The new version provided fuel switching and custom measure modules, allowed for billing of multiple trips to the clients' home, and enhanced the method for selecting client actions.
- *Tablet PC has been tested:* Agencies have tested the Tablet PC as a replacement for the PDA. They reported that it is easier to use and can store information on a much larger number of jobs. Use of the Tablet PC will also eliminate the costs and time of reprogramming the software for the PDA. There is a plan to encourage agencies to adopt the Tablet PC in the next Program year.
- *An education notebook has been distributed:* A PowerPoint education notebook was provided on disk to providers. Monitors have reported that they have seen auditors make use of the notebook as a customer education tool.

### **Additional Advances Expected in the Next Year**

There are many additional advances that are planned for the next year including enhancements to SMOC~ERS, an EPP brochure, another EPP outreach letter, a low-use pilot, increased development of comprehensive services, and a move toward the Tablet PC.

- *Additional SMOC~ERS enhancements:* OEE plans to continue improving the SMOC~ERS software. They are considering adding a screen to allow auditors to view monthly usage, eliminating the usage match-up, changing the algorithm for calculating cost-effectiveness of CFLs, correcting the ambient temperature adjustment for refrigerator and freezer usage, improving invoicing procedures, adding management reports, and fixing the discount rate.
- *EPP Brochure:* A brochure was developed for the EPP and distributed to agencies in July 2004. Agencies can mail the brochure to potential clients.
- *EPP Letter:* OEE will be sending another mass mailing letter. This letter will be targeted to high users and a defined number will be sent to each county. OEE will do

a staggered mailing over four to five months so that the providers will not be overwhelmed.

- *Low Use Pilot:* A low use client pilot will be introduced. This pilot will target PIPP customers with usage below 4,000 kWh annually, the cutoff for the moderate use Program. The audit will not be cost effective for these customers, so they will try workshops, and also a mailing that may include an educational video and some low-cost measures.
- *Improved Definition of Comprehensive Services:* OEE will work to improve the understanding and delivery of comprehensive services so that it is delivered consistently throughout the state.
- *Move Toward Tablet PC:* The testing of the Tablet PC that was done in the past year resulted in very positive reviews. OEE will work with the agencies to move toward this hardware.

### **Program Administration**

OEE has created forms and procedures for documenting auditor performance. However, implementation of these procedures needs to be increased. Documentation from appliance vendors and definition of some EPP policies need to be improved.

- *Monitoring Forms Have Been Developed:* Last year, the OEE monitors reported that observation of the audits was viewed as technical assistance rather than monitoring. This year they reported that monitoring is now viewed as quality control. Systematic procedures for documenting auditor performance have been developed over the past year. However, these reporting forms were only implemented in about a dozen visits this year, and there is not a systematic process for using the results to inform the training process.
- *Documentation from Appliance Vendors Needs to Be Improved:* Monitors reported that agencies are having difficulty obtaining proper certificates of disposal from the refrigerator vendors. One monitor reported that he only saw proper documentation at one of the five agencies that he visited.
- *Some OEE Policy Guidelines Have Not Been Clearly Defined:* Trainers at the SMOC~ERS training did not provide clear or consistent answers to questions about EPP policy on landlord permission for service delivery. Auditors reported in the agency survey that the training only somewhat effectively addressed the issues of landlord leveraging costs, landlord permission, and taking away replaced items.

### **Service Delivery**

Areas for improvement in service delivery include increased production in some utility service territories, improved education delivery, and increased implementation of two-for-

one refrigerator swaps. Providers need additional training on CFL protocols, field measures, and fuel switches.

- *Production in Cinergy and DP&L Service Territories Should be Increased:* The analyses of SMOC~ERS data and OEE financial statistics showed that only about ten percent of clients who have been referred for the EPP have been served in Cinergy's and DP&L's service territories, and that agencies in these territories have utilized less than half of the funding that is available.
- *Education Still Needs Improvement:* Monitors reported that the education component of the audit is still the weak point. Many auditors are still not doing an adequate job of explaining the Program, establishing and confirming the partnership, reviewing the clients' bills, explaining what will be done during the visit, and reviewing the reports at the end of the visit.

The client survey found that many clients do not have a good understanding of their responsibility, the service provider's responsibility, or the benefits of participating in the Program. Many clients reported that the provider did not review their electric bill or provide them with copies of the SMOC~ERS reports. Nine percent of respondents reported that they were somewhat or very dissatisfied with the education that was provided.

- *Providers are not Following Some Important Program Protocols:* Nearly 30 percent of clients reported that the provider left bulbs for them to install after the provider left the home. This practice is inconsistent with Program protocols, and it may lead to CFLs not being installed or not being installed in cost-effective locations.<sup>2</sup>
- *CFL Failure Rate is High:* Based on the client survey, we estimated that six percent of CFLs that are replaced fail by the time of the client survey, approximately six months after services were received.
- *Managers and Auditors are Not Comfortable with Field Measures and Fuel Switches:* Managers and auditors were likely to report in the agency survey that more training was needed on field measures and fuel switches. Many also reported that they had not implemented these measures because of the need for a better understanding of the procedures.
- *Two-For-One Refrigerator Swaps:* Auditors reported in the agency survey that opportunities for such replacement existed in about ten percent of homes and that they were implemented in about seven percent of homes. Analysis of the SMOC~ERS database shows that there are many homes that receive two refrigerator replacements, and that are potential opportunities for two-for-one swaps. This is an example of an opportunity to significantly increase electric savings.

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<sup>2</sup> OEE staff noted that some of these bulbs may have been provided by the CEI program.



### **Technology**

Monitors reported that some auditors have given up on the PDA and are using paper forms to record data from the visit. More problematic is the fact that they do not enter the data into the software until they return to the office. This does not allow for an investigation of electric use when the recorded use does not match the customer's bills.

### **Quality Control**

Additional quality control should be provided by monitoring staff and agencies.

- *Monitoring Staff Is Insufficient:* Three monitors from OEE have been assigned to provide quality control for the EPP. These monitors have had other responsibilities related to the EPP and to the Home Weatherization Assistance Program (HWAP) and have not been able to devote all of their time to Program data review and monitoring. While these monitors have had the opportunity to visit each agency at least once, they have not been able to observe all of the auditors or to observe how auditors are progressing over time.
- *Quality Control Provided by Agencies:* A few agencies still do not provide data review, follow-up phone calls, inspections of completed work, and on-site observation of audits.

## ***Summary of Recommendations***

The recommendations in the areas of Program administration, training, technology, service delivery, and quality control are summarized below.

### **Program Administration**

- *Additional Staff Time Allocated to Monitoring and On-Site Training:* OEE monitors reported that they have visited each agency at least once for observation of the audit and have returned to some agencies. However, some agencies have many auditors, and not all auditors have been observed. Additionally, findings from these observations indicate that additional observations and on-site training is needed to improve the quality of the audits and increase the potential savings from the Program.
- *Create Clear EPP Policy Guidelines and Train Staff on Those Guidelines:* Providers need to be given clear and consistent information about EPP policies and procedures. Decisions should be made on all issues that have been raised, and these decisions should be communicated to all OEE staff and providers.
- *Increased Review of Appliance Disposal Documentation:* Monitors found that this documentation is often missing. OEE should undergo a systematic review of this documentation and, if necessary, work with agencies to make sure that proper documentation is obtained.

- *Work to Increase Production in Cinergy and DP&L Service Territories:* OEE should work with the agencies in these service territories to ramp up production. If necessary, additional providers should be recruited for these areas.

### **Training**

- *Provide Additional Education Training:* Findings from the on-site observations conducted by the monitors and findings from the client survey point to a need for additional education training.
- *Provide Additional Baseload Training:* Monitor reports show that additional baseload training is needed. The agency survey also showed that additional baseload training is needed. Managers reported that additional training is needed on identifying sources of high electric usage.
- *Provide Additional Training on Field Measures and Fuel Switches:* Auditors have not implemented these measures and report that they are not comfortable with the procedures. Additional training is needed in these areas.
- *Review EPP Protocols with Providers:* Providers are still not following protocols related to bulb replacement. These protocols should be reviewed with the providers.

### **Technology**

- *Encourage Adoption of Tablet PC's:* Some auditors are still uncomfortable with the PDA and have abandoned the in-field usage matching. OEE should encourage agencies to move toward the Tablet PC, which may be more user friendly and less prone to data loss.

### **Service Delivery**

- *Require Providers to Replace Failed Bulbs:* The client survey estimated a six percent failure rate for CFLs. Providers should be required to return to homes and replace bulbs that fail in the first year.
- *Provide Incentives for Two-For-One Refrigerator Replacement:* OEE should provide incentives for auditors to find these opportunities and for clients to accept the measure. Agencies could receive extra fees for these measures and clients could receive special features on the refrigerator if they accepted a two-for-one swap.

### **Quality Control**

- *Increase Level of OEE Quality Control:* While monitors reported that each agency was visited at least once, agencies have several auditors, and monitors have not had the opportunity to observe many of the auditors or to determine whether individual auditors are improving. The number of quality control visits to each agency should

be increased to ensure that all auditors are performing at the level expected by the Program.

- *Develop Requirements for Agency Quality Control:* Quality control provided by the agencies should be increased. OEE should specify the type and level of quality control that should be provided by agencies.

## I. Introduction

Ohio's Electric Restructuring Act, passed in July 1999, created the Universal Service Fund (USF) to ensure that low-income households retain access to electric service. The Act seeks to better coordinate the Home Energy Assistance Program (HEAP), the Home Weatherization Assistance Program (HWAP), the Ohio Energy Credits Program (OEC), and the Ohio Electric Percentage of Income Payment Program (PIPP),<sup>3</sup> and creates an Electric Partnership Program (EPP) that provides baseload, weatherization, and energy education services. This report presents the findings from the third year of the Process Evaluation of the Electric Partnership Program.

### A. *Electric Partnership Program*

The Electric Partnership Program (EPP) aims to reduce electric energy consumption of PIPP households, and reduce the growth of PIPP customers' arrears and the USF rider. To accomplish this objective, the EPP provides energy services that vary with the customer's usage level, and education services that vary with the customer's usage and payment. The basis of the Program is the installation of cost-effective energy conservation measures. Education is an important component of the Program to help customers to understand the Program, to improve measure performance, and to take energy-saving actions.

### B. *Evaluation*

This report presents the findings and recommendations from the second year of the Process Evaluation of the Electric Partnership Program. During this time period, the following evaluation activities were undertaken.

- *Administrative Interviews:* APPRISE conducted administrative interviews with OEE staff. The purpose of these interviews was to document the changes made to the Program and to document Program operations, including quality control findings.
- *Review of Production Statistics:* APPRISE reviewed production statistics from the SMOC~ERS database and financial data from OEE. The purpose of this review was to understand how production has grown and stabilized since the introduction of the Program and how production is distributed between the different types of services and between the utility service territories.
- *Client Interviews:* APPRISE conducted the second round of the client interviews in Fall 2003 and the third round of the client interviews in Spring 2004. The purpose of these interviews was to document education provided to clients, client retention of educational information, changes in client behavior, and client satisfaction with the Program.

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<sup>3</sup> The gas PIPP continues to be administered by the utility companies.

- *Program Data:* APPRISE is collecting data from the providers on other programs provided to EPP participants since the delivery of EPP services. After each round of the client survey, agencies are contacted to request information on other programs provided to clients who completed the interviews. These data will help to distinguish the impact of the EPP from other services that Program recipients may have received.
- *Training Observations:* APPRISE observed training on the second version of SMOC~ERS in August 2003. The purpose of these observations and interviews was to document training procedures, as well as agency responses to the training.
- *Agency Survey:* APPRISE conducted the second round of the agency survey in Fall/Winter 2003 and the third round of the agency survey in Spring 2004. The purpose of the survey was to document agency adherence to prescribed Program procedures, services delivered, and need for assistance in implementing the Program.

### *C. Organization of the Report*

Three sections follow this introduction.

- 1) *Section II – Electric Partnership Program:* This section provides a description of the Electric Partnership Program.
- 2) *Section III – Evaluation Activities and Findings:* This section describes the evaluation activities undertaken and the findings and recommendations from these evaluation activities.
- 3) *Section IV – Summary of Findings and Recommendations:* This section summarizes the findings and recommendations made in this report.

APPRISE prepared this report under contract to the Office of Energy Efficiency. OEE facilitated this report by furnishing Program data and information to APPRISE. Blasnik and Associates facilitated this report by providing Program data to APPRISE. Any errors or omissions in this report are the responsibility of APPRISE. Further, the statements, findings, conclusions, and recommendations are solely those of analysts from APPRISE and do not necessarily reflect the views of the Office of Energy Efficiency.

## II. Electric Partnership Program

The Electric Partnership Program (EPP) aims to reduce electric energy consumption of PIPP households and reduce the growth of the PIPP participants' arrears and the USF rider. To accomplish this objective, the EPP provides energy services that vary with the customer's usage level, and education services that vary with the customer's usage and payment. The basis of the Program is the installation of cost-effective energy conservation measures. Education is an important component of the Program to help customers understand the Program to improve measure performance and take energy-saving actions that will achieve savings.

When the EPP was first implemented, it was referred to as the Targeted Energy Efficiency Program. However, it was determined that this name was not a good marketing tool and did not identify the important aspects of the Program. Additionally, providers were sometimes uncomfortable telling customers that they had been "targeted" for the Program. Therefore, it was decided that the Program would be renamed so that it referred to the electric fuel and to a key aspect of the Program, the partnership. The EPP's mandate, goal, and design, as well as the changes made to the Program in the third year, are described below.

### *A. Program Mandate*

Ohio's Electric Restructuring Act, passed in July 1999, created the Universal Service Fund to control the cost of PIPP for the ratepayers and to ensure access for low-income households to electric service. The Act seeks to better coordinate the Home Energy Assistance Program (HEAP), the Home Weatherization Assistance Program (HWAP), the Ohio Energy Credits Program (OEC), and the Ohio Electric Percentage of Income Payment Program (PIPP), and creates an Electric Partnership Program (EPP) that provides baseload, weatherization, and energy education services.

According to the Act, "The director of development shall establish an energy efficiency and weatherization program targeted, to the extent practicable, to high-cost, high-volume use structures occupied by customers eligible for the Percentage of Income Payment Plan Program, with the goal of reducing the energy bills of the occupants. Acceptance of energy efficiency and weatherization services provided by the program shall be a condition for the eligibility of any such customer to participate in the Percentage of Income Payment Plan Program."

The annual funding for the Program is \$14.9 million.

### *B. Program Goals*

The goal of the EPP is to "decrease fuel consumption of Percentage of Income Payment Plan (PIPP) participants." Such a decrease in consumption will lead to a reduction in the growth of PIPP participants' arrears and over time reduce the revenues needed from the USF rider.

### ***C. Program Design and Implementation***

The EPP consists of an audit component using the SMOC~ERS software, an installation of measures component, and a quality control component. Energy conservation measures are to be installed to meet Ohio Weatherization Program Standards (WPS).

This section of the report documents the design of each component of the Program, as well as the current status of Program development and implementation.

#### **1. Program Administration**

The Ohio EPP is managed by the Ohio Department of Development (ODOD) Office of Energy Efficiency (OEE). Programs are delivered by 9 authorized providers and 29 sub-agencies.

##### ***a) Office of Energy Efficiency (OEE)***

The OEE is responsible for the development and implementation of the EPP.<sup>4</sup> These responsibilities included an RFQ and an RFP process for selecting the agencies to provide services under the Program. Agencies were selected based upon geographic area of service, cost of administering the Program and serving customers, capacity, and previous experience.

The Office of Energy Efficiency is also responsible for customer screening and targeting customers into the different Program components. The purpose of the screening is to direct services toward those PIPP customers with the highest usage and who therefore have the greatest potential for achieving cost-effective energy savings. The purpose of targeting is to channel customers into the services that will maximize energy savings. Once customers have been screened and targeted into the different Programs, OEE sends lists of customers to the providers. These lists are provided based upon location, usage characteristics, and building type.

After agencies have served customers, they send their SMOC~ERS data to OEE. These data provide OEE with all the information needed to determine that cost-effective measures have been installed and to remit payment for the services that the agencies provided. SMOC~ERS reports also allow OEE to perform a limited amount of quality control. The following checks can be made on the data.

- OEE can ensure that all measures installed are cost-effective according to the SMOC~ERS software and the data entered by the provider.

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<sup>4</sup> An important component of the EPP design for OEE was to streamline service delivery to customers to allow for cost-effective service delivery.

- OEE can determine the extent to which providers are matching up actual usage with the usage in the PDA or from a more recent bill that was entered into the PDA, both average monthly usage and seasonal usage.
- OEE can check that all data that should be collected are included in the SMOC~ERS data.

OEE is also responsible for ensuring that training is available for providers and for documenting Program procedures.

Additionally, OEE provides in-field monitoring and training, where field staff can determine whether providers are finding all cost-effective opportunities for measures, as well as educating customers on energy saving actions. Where deficiencies are seen, they can provide supplemental training.

***b) Provider Agencies***

Nine authorized providers are responsible for providing services under the EPP. Some of these agencies have subagencies working for them and are responsible for reporting and invoicing for these agencies as well.

Provider agencies, as part of the RFP for Program services, were asked to provide a high, moderate, and low baseload audit fee, and a weatherization audit fee. The audit fee, charged for each household served, includes all costs for managing the project, as well as the cost of auditing the home and installing measures. The management activities include oversight of partner agencies and subcontractors, receiving the referral from OEE, contacting and scheduling visits with the clients and landlords, securing contributions from the landlords, processing paperwork, scheduling crews or contractors, final quality control, insurance, equipment, materials management and storage, and submitting invoices. The service delivery responsibilities include the collection of site-specific usage information, the audit procedures, confirmation of installed measures, and assurance of customer satisfaction. (Training is included in a separate budget item, along with software and hardware.)

Providers were also asked to bid on costs for the comprehensive services initial visit, a follow-up visit, a follow-up phone contact, and a follow-up mail contact.

Based upon these bids, agencies were allocated a dollar figure for the amount of services that could be performed. Agencies were told that if they utilized their allotment, they could obtain more Program funds to serve additional customers. Based on the budgets and the providers' estimates of costs to serve customers, agencies were also provided with targets for numbers of customers to serve. Table II-1 displays provider budgets for delivery by type of service delivery and visit, and by utility service territory for the third year of the Program.



**Table II-1  
Provider Budgets  
Fiscal Year 2004**

<b>Service Territory</b>	<b>Provider</b>	<b>Funding</b>
<b>FirstEnergy</b>	Ashtubula	\$373,976
	CHN	\$2,484,655
	EANDC	\$1,099,911
	Honeywell	\$1,730,508
	Ohio Heartland	\$196,919
	Portage	\$115,687
	Wayne Medina	\$106,177
	COAD	\$117,167
<b>DP&amp;L</b>	Honeywell	\$808,933
	COAD	\$23,310
	CAP Dayton	\$333,257
<b>AEP</b>	EANDC	\$230,000
	COAD	\$2,176,469
	Honeywell	\$1,885,842
	Ohio Heartland	\$60,000
	Wayne-Medina	\$72,689
<b>CINERGY</b>	Honeywell	\$960,630
	CAP Dayton	\$15,000
	COAD	\$49,370
<b>Allegheny</b>	COAD	\$34,500
<b>TOTAL</b>		\$12,875,000

Agencies are responsible for delivering Program services. The steps involved in this process include:

1. Recruiting high use and moderate use PIPP customers on the lists provided by OEE
2. Scheduling a home visit
3. Conducting a home visit
4. Performing follow-up or case management
5. Conducting quality control
6. Providing OEE with electronic SMOC~ERS data

## **2. Screening and Targeting**

OEE obtains usage data on a quarterly basis from the electric utilities in Ohio containing data for all customers participating in PIPP. These data are analyzed to determine which customers should be served and which customers should be targeted to baseload and weatherization services.

The following targeting standards have been implemented:

- Customers with annual baseload usage of 6,000 kWh or more are targeted for baseload services.
- Customers with annual heating or annual cooling usage of 6,000 kWh or more are targeted for weatherization services.
- In November 2002, a moderate use component was introduced. Customers with annual baseload usage between 4,000 and 6,000 kWh are targeted for these services.

## **3. Outreach and Intake**

After OEE targets customers into different services, they send files to the agencies with customer information, demographic data, usage data, and targeting data. As all customers on the list are PIPP participants and they have already been screened for eligibility by OEE, the provider is not responsible for screening customers. The Provider is responsible for contacting the customer and scheduling the audit and any required follow-up visits.

## **4. Energy Services**

The Electric Partnership Program (EPP) planned for three levels of energy service to be provided based on the customer's electric energy consumption. The three levels of service are baseload efficiency, weatherization/moderate use Program, and the high use Program. The baseload and weatherization services, and a new moderate use component, have been implemented. OEE is currently working on developing a low-use pilot.

### ***a) Baseload Efficiency***

Baseload usage is defined as energy used for purposes other than heating and cooling, such as refrigeration, lighting, domestic hot water, cooking, and appliances. The Baseload Efficiency Program focuses on the provision of energy conservation measures that reduce only baseload usage. Measures included in this Program are:

**Water Measures**

- Hot water tank insulation
- Reducing hot water temperature
- Energy-efficient showerheads
- Energy-efficient faucet aerators
- Water line insulation
- Fuel-switching of hot water tanks

**Lighting Measures**

- Compact fluorescent lights
- Replacement of a halogen torchiere lamp with a fluorescent torchiere

**Refrigerator/Freezer Measures**

- Refrigerator/Freezer replacement
- Removal of secondary refrigerator or freezer

**Waterbed Measures**

- Waterbed mattress replacement
- Insulation blanket on waterbed

**Other Measures**

- Switching to an alternate rate or off-peak program
- Consumer education

***b) Weatherization***

This Program addresses heating and cooling electric usage as well as baseload usage. In addition to installing the cost-effective baseload measures included in the list above, this Program installs weatherization measures aimed at reducing heating and cooling usage. These measures may include:

- Insulation
- Air sealing
- Heating and cooling equipment repair
- Heating and cooling equipment upgrades
- Heating and cooling equipment replacements
- Distribution system repairs

***c) Moderate Use***

A moderate use component, serving customers with 4,000 to 6,000 kWh annual baseload usage, under 6,000 kWh annual heating usage, and under 6,000 kWh annual cooling usage has been implemented. The moderate use audit focuses on

explaining the Program and developing a partnership with the customer; analyzing lighting, refrigerator, freezer, and waterbed usage; and developing an action plan with the customer. Major differences from the baseload efficiency services provided to higher use customers include:

- The auditor is required to collect usage data only for appliances that will have measures and actions associated with them, not for all electrical appliances in the home, as in the high use component.
- The auditor is not required to get estimated usage within ten percent of the actual usage on the analysis report, as in the high use component.
- Only a one-hour metering of the refrigerator is required (if the refrigerator is not in the database), as opposed to a two-hour metering for the high use component.

## **5. Education Services**

The goal of the customer education component is to reduce the electric energy use of PIPP households to a level that is affordable and to maximize the benefits of the energy conservation measures and other services received. The level of education received by the customer will vary with the level of energy use and the customer's payment behavior. Two levels of education may be provided: one in-home visit with follow-up and in-home case management.

### ***a) One In-Home Visit***

Most customers will receive one in-home visit. This visit will include an introduction to the Program, an analysis of the customer's usage, an energy tour, and an action plan. It was originally planned that in homes with higher usage, the educator would not install measures and that a separate visit would be provided for measure installation. However, Program plans have been altered to include education and measure installation in one visit for all participants.

The steps of the in-home education visit are described below.

- 1) Introduction: The objectives of the introduction are to set the tone for participation, explain the Program, obtain client commitment, and obtain Program data.
  - Purpose of the visit: The provider is to explain that the purpose is to develop an action plan for the customer and what the provider will do for the customer.

- Program overview and steps: The provider is to explain the services of the Program, the responsibilities of the client and the provider, and the benefits to the client and the provider.
  - Partnership agreement: The provider should communicate the fact that the Program is a partnership and that there are responsibilities and benefits for both the provider and the client. The provider should review the commitments of the provider and the client.
  - Action plan as goal of the visit
  - Use of educator teaching notebook
- 2) Usage analysis: The purpose of this section of the visit is to review the customer's energy usage.
- Show the customer 12 months of usage
  - Explain baseload versus heating and cooling usage
  - Explain how to read the meter if the customer has estimated readings
  - Educate the customer about his/her bill
  - Give the customer a clipboard to write down actions that he/she will consider during the house tour
- 3) Conduct an energy tour: The objectives of the tour are to determine what work needs to be done in the home and to identify the five biggest opportunities for reducing usage.
- Review biggest user electric appliances for the household
  - Estimate costs per appliance using the customer's habits
  - List suggested actions
- 4) Action plan
- Review list of suggested actions from notepad
  - Get customer's commitment for three to five actions
  - Complete energy savings action plan
  - Reinforce consequences of each action

### 5) Conclusion

- Complete and sign action plan
- Complete paperwork, including list of measures installed
- Provide customer with folders and forms
- Give customer copies of worksheets
- Review next steps and time frame
- Provide referral information
- Establish follow-up procedures

### ***b) In-Home Case Management***

In-home case management includes the initial education visit described above, as well as another home visit and monthly follow-up by mail, phone, or in person. The form of this follow-up will depend on the customer's need.

The objectives of the case management energy education session are to:

- 1) Help the customer to increase control over energy costs, decrease energy use, and improve his/her ability to pay electricity bills.
- 2) Develop three new actions for the customer.

An important component of the case management session is budget counseling. The goals of the budget counseling component are to:

- 1) Keep accurate records of income and expenses for six months.
- 2) Develop a spending plan.
- 3) Place the electric bill as the third or fourth spending priority.
- 4) Provide a payment to the electric company each month for the next year.
- 5) Contact the utility company if the customer needs to discuss his/her payments.

Topics covered during the budget counseling session will include income, expenses, a spending plan, the utility bill, and the benefits of paying the utility bill.

The steps of the energy case management visit are outlined below:

## 1) Introduction

- Purpose of the session
- Benefits of the Program
- Steps of the process

## 2) Review action plan

## 3) Review energy efficiency measures

- Tour home
- Review results/benefits
- Discuss proper use and maintenance of measures
- Problem solving

## 4) Utility bill analysis

## 5) Budget counseling

## 6) Referrals including energy assistance

## 7) Update action plan

## 8) Discuss next steps

**c) *Follow-up***

In addition to receipt of one of the education programs described above, all customers will receive at least one follow-up contact. The follow-up contact can be via mail, phone, or in person, based on an assessment of which would be of most benefit to the client. The purpose of this follow-up is to remind customers of their responsibilities and to review the benefits of the Program. It was originally planned that for one year following the home visit, the provider would check the customer's monthly payment and usage patterns. Usage tracking was planned to determine if savings are being achieved and to discuss solutions if the projected savings are not being met. Payment tracking was planned to determine if customers are meeting their commitments to make payments and to help the customer prioritize energy payments as the third or fourth spending priority.

## **6. Service Delivery**

Two methods of service delivery were planned. Cost-share and stand-alone service delivery are described below.

### ***a) Cost-Share***

With this method of service delivery, the EPP is delivered in conjunction with other low-income weatherization and/or housing repair/rehabilitation programs. Because the provider can divide the cost of contacting the client, scheduling the visit, and traveling to the home between the different programs, the cost of administering the cost-share program should be lower than the cost of administering the stand-alone component. The cost-share approach has been eliminated.

### ***b) Stand-Alone***

With this method of service delivery, the EPP is delivered on its own and must bear all the costs of outreach and delivery. The EPP must perform stand-alone work, as the annual service delivery for this Program will be much higher than the combined delivery of existing programs. Therefore, the intent of the stand-alone delivery is to address the shortfall of homes that cannot be addressed by the cost-share program.

## **7. Technology**

OEE decided to utilize a new technology in the implementation of the EPP. This technology consists of an audit software tool, a Personal Digital Assistant (PDA) that allows the provider to collect data in the field, and transfer software that allows the provider to upload data to the desktop. The technology aims to serve many purposes, including to:

- Enable OEE to send client demographic and usage data for the targeted clients that can be easily used in the field to the providers,
- Allow providers to collect all of the information they need in the home and enter the data directly into the database,
- Allow providers to determine the source of electric usage and match the usage to historical usage data,
- Allow providers to calculate which measures are cost-effective (those with a savings to investment ratio [SIR] of greater than one) and how much the measures should save the customer,
- Allow providers to determine which actions should be taken and how much the actions should save the customer,



- Allow providers to invoice different funding sources, so that all measures can be identified on cost-share jobs,
- Allow providers to send all data to OEE so that OEE can pay providers for services delivered, perform quality control, and send data to evaluators for analysis purposes.

Given the products available on the market, and the requirement for the ability to bill multiple funding sources, OEE decided to purchase the SMOC~ERS software, developed and used by SMOC, an agency in Massachusetts. While the South Middlesex Opportunity Council (SMOC) had previously implemented the software on laptops, OEE decided to use PDAs in the field because of their ease of use and their increased durability over the laptop. The PDA uses a cradle and transfer software to send the data collected in the field to the provider's desktop machine. These data are then sent to OEE each month on a disc. OEE uses the data to perform quality control, pay providers for clients served, and send data to evaluators.

OEE is currently working with the providers to transition from the PDA to a Tablet PC. The Tablet PC will require one less step when updating the SMOC~ERS software, and it is able to store information on a much larger number of clients.

## **8. Material Procurement**

OEE sent out an RFP for bulk procurement of refrigerators and freezers. Products acquired through this bid process are available to all providers. Additionally, providers were given the opportunity to bid to supply refrigerators and freezers. All refrigerators and freezers are required to be recycled in an environmentally sound manner. The point of the bulk procurement process is to reduce the costs for the provision and removal of refrigerators and to enable providers to arrange for refrigerator delivery and removal with one phone call.

Providers are responsible for procuring compact fluorescent light bulbs. Providers submitted prices for these bulbs and their installation as part of their response to the RFP for service providers.

Other measures that providers are responsible for procuring include showerheads, faucet aerators, water heater tank wraps, waterbed pads, building shell and mechanical measures, insulation measures, air sealing measures, and HVAC measures.

## **9. Landlord Contributions**

Landlords are required to make a contribution in the form of a cash payment or in the form of an in-kind health and safety-related repair if necessary for conservation work to be performed. If appliances being replaced, such as the refrigerator or the water tank, are owned by the landlord, the landlord is required to contribute 50 percent of the costs of the materials and labor.

## ***D. Changes and Enhancements to the EPP in Fiscal Year 2004***

Several changes have been made to improve the EPP in the third year of the Program. The number of authorized providers has been reduced, a new version of SMOC~ERS has been introduced that allows for fuel switching and custom measures, the policies and procedures manual has been updated and enhanced, monitoring forms were developed, an education notebook was distributed, the Tablet PC has been tested, the cost-share approach has been eliminated, and new cost ceilings were introduced. Each of these changes is described below.

### **1. Providers**

The number of authorized providers for the EPP has been reduced from 18 for the first two years of the Program, to only nine. OEE only awarded contracts to those providers who submitted competitive bids for the next Program period.

### **2. SMOC~ERS Version 2**

SMOC~ERS Version 2 was released in August 2003. This version added many improvements to the software. Some of the key improvements are described below.

- Fuel switching: Agencies now have the capability to provide fuel switching from electric hot water or electric dryers to gas appliances, as the new version of SMOC~ERS contains screens for the fuel switching.
- Custom measures: Agencies have the capability to install custom measures with an SIR of greater than one.
- Multiple visits: The new version of SMOC~ERS allows for billing for multiple trips to the clients' homes. This allows agencies to bill directly through SMOC~ERS for follow-up education and case management visits.
- Actions enhanced: The method for selecting actions and the cost savings associated with the actions has been overhauled to provide for easier selection and more accurate savings estimates.

### **3. Policies and Procedures Manual**

The Policies and Procedures Manual has been updated and improved. The manual contains information on auditing procedures, weatherization program standards, requirements for landlord contributions, invoicing and reimbursement, referral of clients, and PDA software and hardware.

#### **4. Monitoring Forms**

Monitoring forms have been developed for the monitors to record consistent information on each visit observed. The visits are now viewed as quality control rather than as technical assistance.

#### **5. Education Notebook**

An education notebook was distributed on disc in July 2003. Monitors reported that auditors have been providing the notebook to clients to review while they input data into the PDA.

#### **6. Tablet PC**

Agencies have tested the Tablet PC as a replacement for the PDA. They report that it is easier to use and can store information on a much larger number of jobs. There is a plan to encourage agencies to adopt the Tablet PC in the next Program year.

#### **7. Cost-Share Approach Is Eliminated**

The cost-share component of the EPP was eliminated. Providers had indicated that it was difficult to fit the EPP audit into other audit procedures. Because most other programs did not require the level of customer interaction that the EPP required, there appeared to be little time savings by combining programs. It was also difficult for OEE to target customers into cost-share or stand-alone because they did not have data on the other programs clients had received.

#### **8. Cost Ceilings for Administrative/Audit Fees**

The following cost ceilings for administrative and audit fees were imposed.

- High Baseload: \$225
- Moderate Baseload: \$175
- Low Baseload: \$25
- Weatherization: \$100
- Comprehensive Services, Initial Visit: \$225
- Mail Follow-up: \$10
- Phone Follow-up: \$20

- In-Home Follow-up: \$50

### *E. Program Changes for Fiscal Year 2005*

Many Program changes are planned for the following year. These changes are described below.

#### **1. Additional SMOC~ERS Enhancements**

OEE plans to continue improving the SMOC~ERS software. They are considering adding a screen to allow auditors to view monthly usage, eliminating the usage match-up, changing the algorithm for calculating cost-effectiveness of CFLs, correcting the ambient temperature adjustment for refrigerator and freezer usage, improving invoicing procedures, adding management reports, and fixing the discount rate.

#### **2. EPP Brochure**

A brochure was developed for the EPP and distributed to agencies in July 2004. Agencies can mail the brochure to potential clients.

#### **3. EPP Letter**

OEE will be sending another mass mailing letter. This letter will be targeted to high users and a defined number will be sent to each county. OEE will do a staggered mailing over four to five months so that the system will not be overwhelmed.

#### **4. Low Use Client Pilot**

A low use client pilot will be introduced. This pilot will target PIPP customers with usage below 4,000 kWh annually, the cutoff for the moderate use Program. The audit will not be cost effective for these customers, so they will try workshops, and also a mailing that may include a video and some low-cost measures.

#### **5. Improved Definition of Comprehensive Services**

OEE will work to improve the understanding and delivery of comprehensive services so that it is delivered consistently throughout the state.

#### **6. Limit Light Bulb Installations**

The impact evaluation found that CFLs only realized about half of their expected savings. This is due to the fact that clients cannot accurately report usage, some bulbs are left by providers and are never installed, there is a high bulb failure rate, and some

bulbs are removed. OEE will review and revise the formula so that fewer light bulbs are replaced.

## **7. Move Toward Tablet PC**

The testing of the Tablet PC that was done in the past year resulted in very positive reviews. OEE will work with the agencies to move toward this hardware.

### III. Evaluation Activities and Findings

This section of the report describes the evaluation activities conducted during the third year of the EPP Process Evaluation, the findings from these evaluation activities, and recommendations for the EPP. During the third Program year, APPRISE conducted interviews with OEE staff responsible for the EPP, reviewed EPP production statistics, conducted interviews with recipients of EPP services, observed SMOC~ERS training, and conducted two agency surveys. Each of the activities, and related findings and recommendations, is described below.

#### *A. Administrative Interviews*

APPRISE conducted administrative interviews with OEE staff. While administrative interviews during the first Program year focused on Program design and initial implementation, interviews in the second and third Program years focused more on Program operations.

##### **1. Goals of the Evaluation Activity**

The purpose of these interviews was to document the changes made to the Program and to document Program operations, including quality control findings. The goal was to provide accurate documentation of the evolution of the Program.

##### **2. Design/Rationale**

Interviews were conducted with OEE staff to obtain updates on Program implementation and Program changes.

##### **3. Evaluation Findings**

The administrative interviews provided information on changes being implemented in the Program, as well as findings from the monitoring visits.

##### *a) Monitoring Staff Is Insufficient*

Three monitors from OEE have been assigned to provide quality control for the EPP. These monitors have had other responsibilities related to the EPP and to the Home Weatherization Assistance Program (HWAP) and have not been able to devote all of their time to Program data review and monitoring. While these monitors have had the opportunity to visit each agency at least once, they have not been able to observe all of the auditors or to observe how auditors are progressing over time.

***b) Monitoring Forms Have Been Developed***

Last year, the OEE monitors reported that observation of the audits was viewed as technical assistance rather than monitoring. This year they reported that monitoring is now viewed as quality control. Systematic procedures for documenting auditor performance have been developed over the past year. However, these reporting forms were only implemented in about a dozen visits this year, and there is not a systematic process for using the results to inform the training process.

***c) Documentation from Appliance Vendors Needs to Be Improved***

Monitors reported that agencies are having trouble obtaining proper certificates of disposal from the refrigerator vendors. One monitor reported that he only saw proper documentation at one of the five agencies that he visited.

***d) CFL Placement Needs Improvement***

One monitor reported that there are many CFLs that are placed in inappropriate locations. He finds that all incandescents in the basement have been replaced with CFLs when it is obvious that the basement is not often used.

***e) Metering of Appliances Other Than Refrigerators is Inconsistent***

While one monitor reported that he did observe auditors using the electric meters to determine usage of appliances where a label was not present, another monitor said that he had not seen this done. He reported that the auditors were accustomed to using the SMOC~ERS default values.

***f) Education Component Is Still Weak***

Monitors reported that the education component of the audit is still the weak point. However, they have reported improvements over last year.

- *Explaining the Program:* Monitors reported that about 70 percent of auditors explain the Program adequately.
- *Establishing and confirming the partnership:* Monitors reported that about 30 to 50 percent of auditors are developing the partnership.
- *Reviewing the clients' bills:* Monitors reported that 30 to 60 percent of the auditors are reviewing the bills, but that most are not discussing the client's arrearages.
- *Explaining what will be done during the visit:* Monitors reported that most of the auditors explain that they will be checking the lights and refrigerator but do not go beyond this explanation.

- *Asking the client what he/she thinks are the high users:* Monitors reported that most of the auditors are not discussing this with the client.
- *Adding actions to the action report and providing a copy of the report to the client:* Monitors reported that the majority of auditors who identify actions during the walk-through put the actions on the report.
- *Reviewing the reports with the client at the end of the visit:* Monitors reported that the majority of auditors review the action report with the client, but not the other reports.
- *Education cards and notebook:* Monitors reported that they have not seen the auditors use the education cards. However, one monitor reported that he has seen many of the auditors use the education notebook, as a tool to keep the client involved while they enter data into the PDA.

***g) Auditors Still Use Paper to Record Data***

One of the monitors reported that some of the auditors have given up on the PDA and are using paper. Some return to the office to enter data into the computer. This can be problematic if the usage does not match up.

#### **4. Recommendations**

Below are recommendations based on findings from the administrative interviews.

***a) Additional Staff Time Allocated to Monitoring and On-Site Training***

OEE monitors reported that they have visited each agency at least once for observation of the audit and have returned to some agencies. However, some agencies have many auditors, and not all auditors have been observed. Additionally, findings from these observations indicate that additional observations and on-site training is needed to improve the quality of the audits and increase the potential savings from the Program.

***b) Additional Education and Baseload Training***

Findings from the on-site observations conducted by the monitors point for a need for additional education and baseload training.

***c) Increased Review of Appliance Disposal Documentation***

Monitors found that this documentation is often missing. OEE should undergo a systematic review of this documentation and, if necessary, work with agencies to make sure that proper documentation is obtained.



## ***B. Review of Program Statistics***

The SMOC~ERS database contains detailed information on each job completed, including date completed, service delivery agency, utility service territory, and type of job. A review of these data provides important information as to Program accomplishments and the characteristics of the jobs that have been completed. A review of OEE financial data provided information on the level of grants provided to each service territory, and the extent to which those grants had been utilized.

### **1. Goals of the Evaluation Activity**

The purpose of this review was to understand how production has grown and stabilized since the introduction of the Program and how production is distributed between the different types of services and between the utility service territories.

### **2. Design/Rationale**

Michael Blasnik provided summary statistics from the SMOC~ERS database for APPRISE to review and analyze. OEE provided expenditure statistics by utility and agency to APPRISE.

### **3. Evaluation Findings**

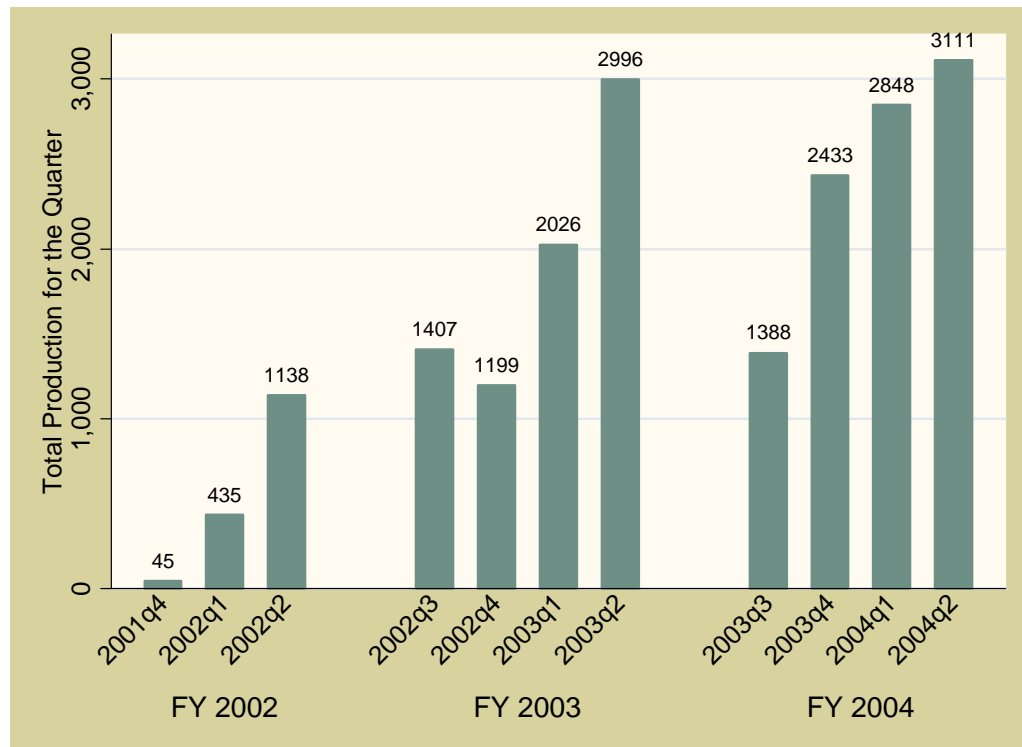
#### ***a) Total Production***

EPP production has grown steadily over the three years of the Program. Graph III-1 displays production by quarter. There was a large decline at the beginning of the third fiscal year of the Program when the number of authorized providers declined from 18 to nine. However, production has since rebounded.

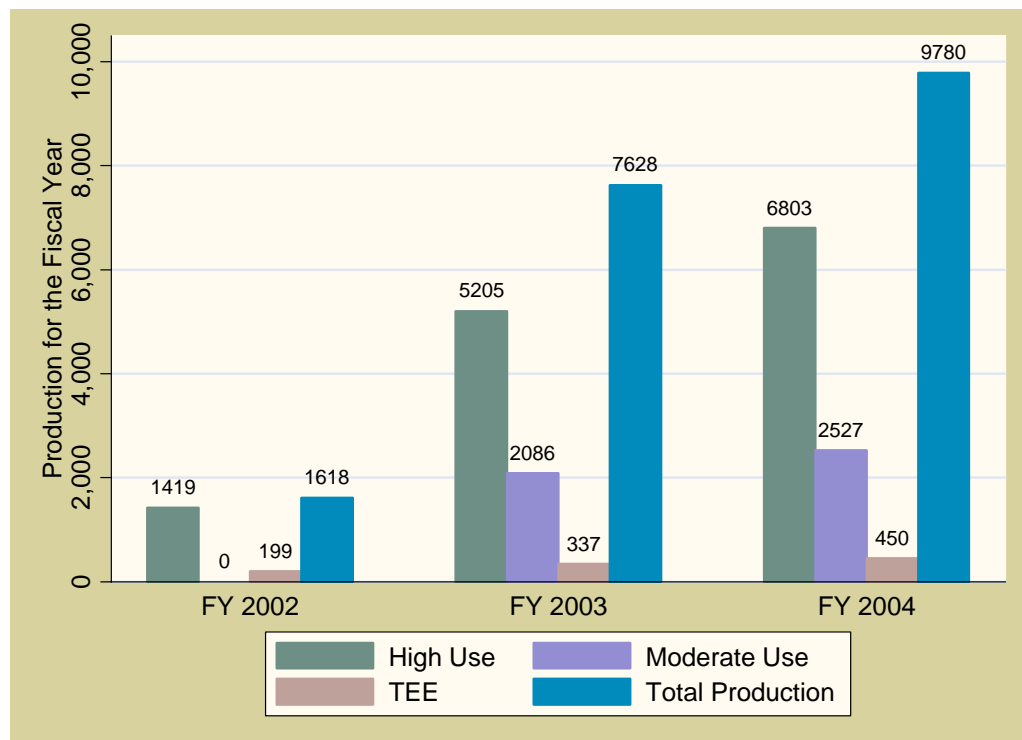
Graph III-2 displays total production by fiscal year and type of service. Production in the first year of the Program was mainly high use, with a few TEE jobs. Production in the second and third Program years was about three quarters high use, and most of the other quarter was moderate use.

Table III-1 displays production by quarter and type of service. A total of 19,026 jobs were completed in the first three years of the Program.

**Graph III-1**  
**Total Production by Quarter**



**Graph III-2**  
**Production by Fiscal Year And Type of Service**



**Table III-1**  
**Production by Quarter and Type of Service**

Program Year	Quarter	High Use	Moderate Use	TEE	Total	Program Year Total
FY 2002	Q4 2001	45	0	0	45	1,618
	Q1 2002	400	0	35	435	
	Q2 2002	974	0	164	1,138	
FY 2003	Q3 2002	1,343	0	64	1,407	7,628
	Q4 2002	1,138	0	61	1,199	
	Q1 2003	1,410	515	101	2,026	
	Q2 2003	1,314	1,571	111	2,996	
FY 2004	Q3 2003	831	497	60	1,388	9,780
	Q4 2003	1,704	589	140	2,433	
	Q1 2004	1,997	722	129	2,848	
	Q2 2004	2,271	719	121	3,111	
TOTAL		11,477	4,006	886	19,026	

<sup>1</sup>Includes data through April 22, 2004.

**b) Production by Agencies**

Table III-2 displays production by fiscal year, lead agency, and service type. This table shows that CHN and HWDMC together have produced half of the jobs completed in the EPP. The other largest producers are COAD, EANDC, and CMACAO (although CMACAO was not a provider in the third year of the Program.) Over 70 percent of the TEE jobs were completed by COAD.

**Table III-2**  
**Production by Fiscal Year, Lead Agency, and Service Type**

Lead Agency	Fiscal Year	High Use	Moderate Use	TEE	Total	Lead Agency Total
ACCAA	2002	90	0	46	136	802
	2003	96	106	49	251	
	2004	305	100	10	415	
CAWM	2002	2	0	0	2	243
	2003	84	19	0	103	
	2004	110	24	4	138	
CCDD	2002	10	0	0	10	27

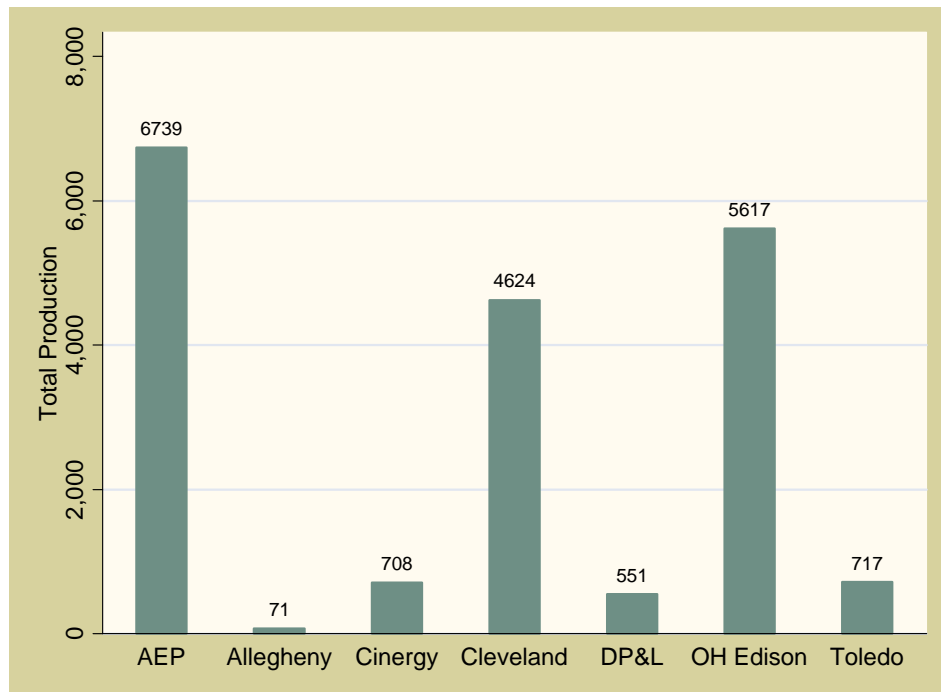
<b>Lead Agency</b>	<b>Fiscal Year</b>	<b>High Use</b>	<b>Moderate Use</b>	<b>TEE</b>	<b>Total</b>	<b>Lead Agency Total</b>
	<b>2003</b>	17	0	0	17	
<b>CHCCAA</b>	<b>2003</b>	49	1	2	52	52
<b>CHN</b>	<b>2002</b>	201	0	13	214	4,163
	<b>2003</b>	1,112	841	2	1,955	
	<b>2004</b>	1,117	877	0	1,994	
<b>CMACAO</b>	<b>2002</b>	347	0	53	400	961
	<b>2003</b>	437	84	40	561	
<b>COAD</b>	<b>2002</b>	12	0	84	96	3,527
	<b>2003</b>	1,129	63	236	1,428	
	<b>2004</b>	1,564	49	390	2,003	
<b>EANDC</b>	<b>2002</b>	64	0	0	64	1,377
	<b>2003</b>	254	146	0	400	
	<b>2004</b>	584	329	0	913	
<b>HHWP</b>	<b>2003</b>	53	18	0	71	71
<b>HWDMC</b>	<b>2002</b>	522	0	0	522	5,594
	<b>2003</b>	913	491	0	1,404	
	<b>2004</b>	2,683	942	43	3,668	
<b>MORPC</b>	<b>2002</b>	38	0	0	38	344
	<b>2003</b>	256	50	0	306	
<b>NCSB</b>	<b>2002</b>	35	0	0	35	164
	<b>2003</b>	81	48	0	129	
<b>NHST</b>	<b>2002</b>	3	0	0	3	115
	<b>2003</b>	67	45	0	112	
<b>OHCAC</b>	<b>2002</b>	45	0	0	45	394
	<b>2003</b>	131	73	0	204	
	<b>2004</b>	105	40	0	145	
<b>PORT</b>	<b>2002</b>	2	0	0	2	242
	<b>2003</b>	37	51	1	89	
	<b>2004</b>	92	56	3	151	
<b>PWC</b>	<b>2002</b>	17	0	0	17	164
	<b>2003</b>	147	0	0	147	

Lead Agency	Fiscal Year	High Use	Moderate Use	TEE	Total	Lead Agency Total
SCOPE	2002	1	0	0	1	332
	2003	94	0	0	94	
	2004	190	47	0	237	
SOURCE	2002	10	0	0	10	15
	2003	5	0	0	5	
WSOS	2002	20	0	3	23	123
	2003	43	50	7	100	
YACAC	2003	200	0	0	200	316
	2004	53	63	0	116	
TOTAL		11,477	4,006	886	19,026	

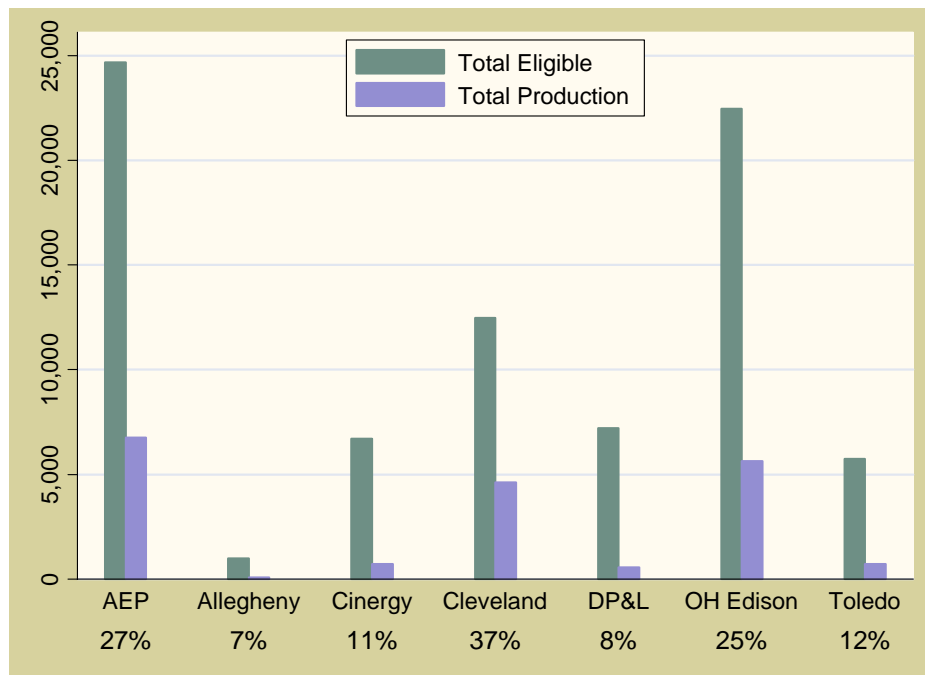
*c) Production by Utility Service Territory*

Graph III-3 displays total Program production by utility service territory. This graph shows that Cleveland Illuminating, Ohio Edison, and AEP are the only utility service territories with significant production levels. Graph III-4 shows that while Cleveland Illuminating served about 37 percent of the clients sent on the OEE lists, Ohio Edison served 25 percent and AEP served 27 percent. The other utilities served twelve percent or fewer of the PIPP clients on the OEE lists.

**Graph III-3**  
**Total Program Production By Utility Service Territory**



**Graph III-4**  
**Total Eligible Population and Program Production**  
**By Utility Service Territory**



**d) Expenditures by Utility Service Territory**

Table III-3 displays the levels of grants and expenditures by utility service territory. Agencies in Cinergy and DP&L service territories utilized less than half of the grant dollars in both time periods shown in the table.

**Table III-3  
Grants and Expenditures by Utility Service Territory**

	FY 2002 - FY 2003			FY 2004		
	Grants	Expenditures	Percent Spent	Grants	Expenditures	Percent Spent
<b>AEP</b>	\$4,317,138	\$3,881,039	90%	\$4,425,000	\$3,327,105	75%
<b>Allegheny</b>	\$14,786	\$14,350	97%	\$34,500	\$34,499	100%
<b>Cinergy</b>	\$760,954	\$313,819	41%	\$1,025,000	\$417,942	41%
<b>DP&amp;L</b>	\$946,361	\$386,310	41%	\$1,165,500	\$231,772	20%
<b>First Energy<sup>1</sup></b>	\$8,962,788	\$7,517,956	84%	\$6,225,000	\$5,266,169	85%

<sup>1</sup> First Energy includes Cleveland, Ohio Edison, and Toledo.

#### **4. Recommendations**

The analyses above showed that only about ten percent of clients who have been referred for the EPP have been served in Cinergy's and DP&L's service territories, and that agencies in these territories have utilized less than half of the funding that is available. OEE should work with the agencies in these service territories to ramp up production. If necessary, additional providers should be recruited in these areas.

### **C. Client Interviews**

APPRISE conducted the first round of the client interviews in Spring 2003. The second and third rounds of the client survey were completed in Fall 2003 and Spring 2004. In each round of the survey, Program recipients were interviewed about EPP services received, changes in electric uses, and satisfaction with the Program. Additional rounds of the survey are planned for Fall 2004, and Spring 2005.<sup>5</sup>

#### **1. Goals of the Evaluation Activity**

The purpose of these interviews was to document education provided to clients, client retention of educational information, changes in client behavior, and client satisfaction with the Program.

<sup>5</sup> For more details on the client survey, see "Ohio EPP Client Survey – Round 3" 7/9/04.

## **2. Design/Rationale**

The five rounds of the survey were planned to measure changes in Program implementation over the first few years of the EPP. Three rounds have been conducted to date.

- Round 1 – Spring 2003: This survey documented services provided July 2002 through December 2002. 129 clients were interviewed.
- Round 2 – Fall 2003: This survey documented services provided January 2003 through June 2003. 149 clients were interviewed.
- Round 3 – Spring 2004: This survey documented services provided July 2003 through December 2003. 159 clients were interviewed.

Two additional rounds of the survey are planned for the next year.

- Round 4 – Fall 2004: This survey will document services provided January 2004 through June 2004.
- Round 5 – Spring 2004: This survey will document services provided July 2004 through December 2004.

These five rounds of the survey will allow for a total sample size of over 625 clients, large enough to analyze results by subgroups, including utility area and for large providers. The time-series nature of the survey will allow for an analysis of how the Program evolves over time.

## **3. Evaluation Findings**

This section provides findings from the latest round of the client survey, conducted in Spring 2004, and draws comparisons with the earlier two rounds.

### ***a) Survey Respondents Profile***

Households who received services under this Program were fairly likely to have a reason for not working, such as being elderly, being disabled, or being composed of a single parent with at least one child under age five. These households were also likely to have a difficult time finding employment that met all of their income needs, as they were likely to have no more than a high school education. Households were likely to receive other types of assistance, in addition to participating in PIPP.

- *Other programs and services:* Most of the clients reported that they had not received other programs or services aimed to improve their homes.



- *Household composition:* Thirty to forty percent of clients had at least one elderly person in the household. About half had one or more children 18 or younger in the home, and forty-four to sixty percent had one or more disabled household members. Clients served in the second cohort were somewhat more likely to have an elderly or disabled household member.

**Table III-4**  
**Household Composition**

Number of Household Members												
	Total			60 or Older			18 or Younger			Disabled		
	Cohort			Cohort			Cohort			Cohort		
	3	2	1	3	2	1	3	2	1	3	2	1
<b>0</b>	--	--	--	70%	59%	74%	41%	54%		52%	39%	56%
<b>1</b>	21%	30%	14%	26%	31%	19%	22%	20%		41%	51%	36%
<b>2</b>	25%	30%	20%	4%	10%	7%	24%	13%		6%	9%	7%
<b>3</b>	27%	12%	18%	0%	0%	0%	5%	6%		1%	1%	1%
<b>4</b>	11%	15%	24%	0%	0%	0%	5%	2%		1%	1%	0%
<b>5</b>	10%	7%	11%	0%	0%	0%	1%	2%		0%	0%	0%
<b>6 - 10</b>	6%	6%	13%	0%	0%	0%	2%	3%		0%	0%	0%

- *Education:* Approximately sixty percent had a high school education or less.
- *Income and Assistance:* Clients in the third cohort were more likely to receive employment income and assistance than clients in the previous cohorts. They were less likely to receive retirement income. Forty-four percent of clients in Cohort Three reported that they received employment income, 28 percent reported retirement income, 49 percent reported public assistance, 57 percent reported non-cash benefits, and 73 percent reported HEAP.

**Table III-5**  
**Types of Income and Benefits Received**

	Cohort Three	Cohort Two	Cohort One
<b>Employment Income</b>	44%	28%	
<b>Retirement Income</b>	28%	38%	37%
<b>Public Assistance</b>	49%	38%	40%

	Cohort Three	Cohort Two	Cohort One
<b>Non-cash Benefits</b>	57%	46%	41%
<b>HEAP</b>	73%	61%	64%

**b) Understanding of the Program**

Clients reported that they have a good understanding of the EPP. Eighty-four to ninety percent of respondents reported that they understand the Program, and about three quarters reported that they feel like a partner in the Program or understand the partnership nature of the Program.

**Table III-6**  
**Understanding of the Program**

	Cohort Three	Cohort Two	Cohort One
<b>Understand the EPP</b>	84%	87%	90%
<b>Feel like a partner in the Program</b>	75%	73%	
<b>Understand partnership nature of the Program</b>			72%

Table III-7 displays clients' report of the service provider's responsibility in the Program. About half of the clients reported that the service provider's responsibility is to reduce their energy use or their energy bills. The percentage of clients who reported that the service provider's responsibility is to reduce energy use or bills is consistent with findings from Round Two of the survey, but lower than in Round One.

**Table III-7**  
**Service Provider's Responsibility**

	Cohort Three	Cohort Two	Cohort One
<b>Reduce energy use or bills</b>	49%	48%	68%
<b>Unrelated to reducing energy use or bills</b>	51%	52%	32%

Table III-8 displays the clients' reports of their responsibility in the EPP. About 40 percent of the clients in Round Three stated that their responsibility was to reduce energy use or follow the service provider's recommendations. This is similar to Cohort One, but lower than in Cohort Two.

**Table III-8**  
**Client's Responsibility**

	<b>Cohort Three</b>	<b>Cohort Two</b>	<b>Cohort One</b>
<b>Reduce energy use or follow recommendations</b>	39%	55%	40%
<b>Unrelated to reducing energy use</b>	61%	45%	60%

Table III-9 displays answers to the question “What do you feel are the benefits of participating in the Program?” Answers total to more than 100 percent, as respondents could provide more than one answer to the question. As with respondents to the first two rounds of the survey, respondents to Round Three of the survey most often reported that the benefits of participation in the Program are to reduce energy use or bills and to save money. Sixty-five percent of clients said that the benefits of participation in the Program are to reduce energy use or bills and to save money, 14 percent said the benefit is to receive a new refrigerator or freezer, and 13 percent said the benefit is to receive services or products other than refrigerators or freezers.

**Table III-9**  
**Benefits of Participation in the EPP**

	<b>Cohort Three</b>	<b>Cohort Two</b>	<b>Cohort One</b>
<b>Reduce energy use or bills/Save money</b>	65%	67%	63%
<b>Receive new refrigerator/freezer</b>	14%	25%	16%
<b>Receive services/products (other than refrigerator and freezer)</b>	13%	17%	14%
<b>Receive education</b>	8%	9%	11%
<b>Receive help/assistance</b>	5%	7%	11%
<b>Make home safer/more comfortable</b>	3%	2%	7%
<b>Can recommend Program to others</b>	0%	1%	0%
<b>Other</b>	3%	1%	0%
<b>Don't know</b>	5%	6%	8%
<b>Not answered on mail survey</b>	2%	0%	

**c) *Satisfaction with Program Services***

Clients were asked about their satisfaction with measures received from the Program, with the education provided, and with the Program overall. Table III-10 shows that most clients in Cohort Three reported that they were very satisfied with measures and education provided by the Program. The aspect of the Program that clients were most likely to be dissatisfied with was energy education. Nine percent of clients said that they were somewhat or very dissatisfied with the energy education. This is higher than in previous rounds of the survey.

**Table III-10**  
**Satisfaction with Program Measures and Services – Cohort Three**

	<b>CFLs<sup>1</sup></b>	<b>Refrigerator<sup>2</sup></b>	<b>Freezer<sup>3</sup></b>	<b>Energy Education</b>	<b>Overall</b>
<b>Very satisfied</b>	70%	87%	97%	75%	85%
<b>Somewhat satisfied</b>	27%	8%	0%	16%	10%
<b>Somewhat dissatisfied</b>	1%	2%	3%	4%	3%
<b>Very dissatisfied</b>	3%	3%	0%	5%	2%
<b>Don't know</b>	0%	0%	0%	1%	0%

<sup>1</sup> 157 respondents. <sup>2</sup> 86 respondents. <sup>3</sup> 27 respondents.

The most common problem clients reported about the Program was that they did not receive everything they expected to receive. Approximately twenty percent of respondents reported that they did not receive everything they had expected to receive in each round of the survey. Clients were most likely to report that they expected but did not receive insulation, weatherization, or a refrigerator.

**Table III-11**  
**Expected Measures and Services Not Received**

	<b>Cohort Three</b>	<b>Cohort Two</b>	<b>Cohort One</b>
<b>Insulation/Weatherization</b>	8%	5%	4%
<b>Refrigerator</b>	5%	5%	11%
<b>Freezer</b>	2%	3%	4%
<b>Light bulbs</b>	2%	3%	1%
<b>Roofing work</b>	2%	1%	3%
<b>Showerhead</b>	2%	0%	0%
<b>Education</b>	1%	1%	0%
<b>Electric work</b>	1%	0%	1%
<b>Furnace</b>	1%	3%	1%
<b>Lamp/Light fixture</b>	1%	0%	1%
<b>Mattress pad for water bed</b>	1%	0%	0%
<b>Refrigerator parts/repairs</b>	1%	1%	1%
<b>Doors</b>	0%	1%	0%
<b>Siding</b>	0%	2%	0%
<b>Stove</b>	0%	1%	0%

	Cohort Three	Cohort Two	Cohort One
<b>Windows/Window repairs</b>	0%	2%	0%
<b>Not asked</b>	82%	79%	78%

**d) Measures**

The survey asked questions about the measures received to assess how these measures were installed and the persistence of the measures. Twenty-nine percent of the clients reported that the provider left some of the CFLs for the client to install after the provider left the home, compared to 37 percent in Round One and 35 percent in Round Two. This practice is inconsistent with Program protocols, and it may lead to CFLs not being installed, or not being installed in cost-effective locations.

Even if the auditors do install the bulbs in the cost-effective locations, clients may remove or move the CFLs if they are unhappy with the bulbs or if their usage patterns change. About ten percent of clients reported that they removed CFLs for reasons other than they burnt out, and about ten percent reported that they moved CFLs in each round of the survey. Clients were most likely to remove CFLs because they were not bright enough. This points to the importance of the auditor installing all bulbs and discussing the room's illumination with the client.

Clients were asked whether any of their bulbs burned out and the number that burned out. Table III-12 shows that 16 percent of clients in Cohort Three said that one bulb burnt out, eight percent said that two burnt out, and 12 percent said that three or more burnt out. On average, about six percent of the bulbs failed. This is a high number of bulbs to fail within one year after service delivery, and suggests that OEE should examine the quality of the bulbs provided and/or the responsibility of the agencies in replacing bulbs that burn out.

**Table III-12**  
**Number of CFL Failures**

	Cohort Three	Cohort Two	Cohort One
<b>1</b>	16%	11%	14%
<b>2</b>	8%	2%	9%
<b>3</b>	4%	2%	2%
<b>4</b>	4%	2%	2%
<b>5 or more</b>	4%	0%	5%
<b>Not asked</b>	64%	69%	69%

*e) Comprehensiveness of the Audit*

The client survey contained many questions aimed to address the comprehensiveness of service delivery. Clients were asked whether the provider asked about all lights and appliances. Table III-13 shows that 85 percent of high use clients in Cohort Three said that the provider asked about all lights and 83 percent said that the provider asked about all appliances. This table shows that a larger percentage of clients said that providers asked about all lights and appliances than in previous rounds of the survey.

**Table III-13**  
**Number of Lights and Appliances That**  
**Provider Asked About - By Type of Service**

	Lights					Appliances				
	Cohort Three		Cohort Two		Cohort One	Cohort Three		Cohort Two		Cohort One
	High Use <sup>1</sup>	Mod Use <sup>1</sup>	High Use <sup>2</sup>	Mod Use <sup>3</sup>	High Use <sup>4</sup>	High Use <sup>1</sup>	Mod Use <sup>1</sup>	High Use <sup>2</sup>	Mod Use <sup>3</sup>	High Use <sup>4</sup>
<b>All</b>	85%	80%	88%	71%	79%	83%	68%	71%	62%	78%
<b>Most</b>	9%	12%	1%	10%	11%	9%	10%	11%	9%	10%
<b>Some</b>	1%	8%	0%	12%	4%	7%	14%	4%	14%	5%
<b>None</b>	5%	0%	6%	4%	0%	0%	3%	5%	9%	5%
<b>Don't know</b>	2%	0%	5%	3%	6%	2%	5%	9%	6%	1%

<sup>1</sup> 63 Respondents. <sup>2</sup> 54 Respondents. <sup>3</sup> 62 Respondents. <sup>4</sup> 129 Respondents.

Note: Responses are not shown for TEE respondents, as they represent a small percentage of those surveyed.

Respondents were asked if the provider discussed with them how their household uses particular appliances in the home. Table III-14 shows how often providers asked about each of the appliances specifically discussed in the survey. Among the 65 high use respondents with air conditioners, 52 percent reported that the provider asked about their use of air conditioning. Of the 38 high use respondents who reported leaving lights on all night, 59 percent reported that the provider discussed this use with them. This is down from 67 percent in Round One and 75 percent in Round Two.

**Table III-14**  
**Appliances that Provider Asked About**

	Cohort Three				Cohort Two				Cohort One	
	High Use		Moderate Use		High Use		Moderate Use		High Use	
	#	%	#	%	#	%	#	%	#	%
<b>Air conditioning</b>	65	52%	24	34%	65	38%	39	33%	95	66%
<b>Dehumidifier</b>	8	100%	6	14%	12	22%	9	19%	16	33%
<b>Dishwasher</b>	14	78%	9	52%	17	65%	10	60%	27	67%
<b>Electric dryer</b>	83	76%	27	59%	60	77%	46	40%	110	65%
<b>Lights on all night</b>	38	59%	17	67%	35	75%	20	80%	75	67%
<b>All uses</b>	106	85%	45	79%	78	83%	63	79%	127	88%
<b>Other uses</b>	21	23%	12	41%	20	46%	12	29%	27	47%

*f) Energy Education Provided*

Auditors are expected to provide comprehensive energy education while in the home. This means they should explain the Program, explain the customer's bill, discuss actions that the client can take to reduce energy usage, and explain the measures provided by the Program.

The survey included questions that addressed whether the provider explained the energy bill. Table III-15 shows that 71 percent of clients reported that the auditor reviewed and explained their electric bills, 55 percent said that the auditor explained how the client could determine if electric use was increasing or decreasing, and 59 percent said that the auditor explained how electricity use is measured. These percentages are higher than what has been observed in the field and represent positive findings for the Program. However, the percentage of clients who reported that the provider addressed these fundamental issues in energy education has remained constant or declined over the course of the three rounds of the survey.

**Table III-15**  
**Provider's Explanation of Electric Bill**

	Cohort Three	Cohort Two	Cohort One
<b>Reviewed and explained bill</b>	71%	70%	76%
<b>Explained how to tell if use is increasing or decreasing</b>	55%	63%	61%
<b>Explained how electric use is measured</b>	59%	56%	71%

The survey also addressed whether the provider developed an action plan with the client. Table III-16 shows that 82 percent of high use clients reported that the auditor verbally suggested energy-savings actions, compared to 69 percent of moderate use clients. Sixty-six percent of high use clients reported that the provider helped them develop an action plan, compared to 61 percent of moderate use clients. Sixty-three percent of high use clients and 55 percent of moderate use clients reported that the auditor provided savings estimates related to suggested actions. Seventy-six percent of high use and 79 percent of moderate use clients said that they committed to taking actions to save electricity. The percentage of high use clients who reported that they committed to take energy-saving actions declined from Rounds One and Two.

**Table III-16**  
**Actions and Commitments - By Type of Service**

	Cohort Three		Cohort Two		Cohort One
	High Use	Moderate Use	High Use	Moderate Use	High Use
<b>Auditor verbally suggested actions</b>	82% <sup>1</sup>	69% <sup>1</sup>	86% <sup>2</sup>	78% <sup>4</sup>	78% <sup>6</sup>
<b>Auditor developed action plan with respondent</b>	66% <sup>1</sup>	61% <sup>1</sup>	56% <sup>2</sup>	56% <sup>4</sup>	71% <sup>6</sup>
<b>Auditor provided savings estimates</b>	63% <sup>2</sup>	55% <sup>3</sup>	69% <sup>5</sup>	51% <sup>3</sup>	72% <sup>7</sup>
<b>Respondent committed to taking actions</b>	76% <sup>1</sup>	79% <sup>1</sup>	88% <sup>2</sup>	86% <sup>4</sup>	87% <sup>6</sup>

<sup>1</sup> 63 Respondents. <sup>2</sup> 54 Respondents. <sup>3</sup> 49 Respondents. <sup>4</sup> 62 Respondents. <sup>5</sup> 48 Respondents. <sup>6</sup> 129 Respondents. <sup>7</sup> 109 Respondents.

Note: Responses are not shown for TEE respondents, as they represent a small percentage of those surveyed.

**g) Program impact on energy use**

The impact of the Program on energy use is assessed by responses to questions about actions committed to and taken, and to questions about reducing specific end uses.



Seventy-six percent of high-use and 79 percent of moderate-use respondents reported that they felt they had made a commitment to take energy-saving actions. The actions clients most commonly mentioned were turning lights off, turning appliances off when not in use, and conserving energy. Clients were much less likely to mention more specific actions such as line drying clothes, using cold water for clothes washing, or ceasing use of an extra refrigerator or freezer.

Clients were more likely to report reducing specific end-uses when asked directly about the appliance. Seventy-three percent of high-use clients and 62 percent of moderate-use clients reported that they reduced their use of lights. Forty-two percent of high-use clients reported that they reduced their use of the dryer and 56 percent of moderate use clients reported that they reduced their use of the dryer.

**Table III-17**  
**Reduced End Uses**

	Cohort Three				Cohort Two				Cohort One	
	High Use		Moderate Use		High Use		Moderate Use		High Use	
	#	%	#	%	#	%	#	%	#	%
<b>Hot water</b>	61	52%	10	38%	35	43%	24	77%	127	75%
<b>Air conditioning</b>	65	29%	24	18%	65	49%	39	65%	110	72%
<b>Electric dryer</b>	83	42%	27	56%	60	62%	46	59%	66	61%
<b>Dishwasher</b>	14	29%	9	47%	17	55%	10	78%	95	32%
<b>Lights</b>	106	73%	45	62%	78	78%	63	69%	27	39%
<b>Dehumidifier</b>	8	74%	6	14%	12	14%	9	39%	16	46%

Note: Responses are not shown for TEE respondents, as they represent a small percentage of those surveyed.

#### ***h) Program Impact on Bills***

Clients were asked if their electric bills were higher, lower, or the same at the time of the survey as they were at the same time the prior year. Seventy-four percent reported that their electric bill was lower than it had been. Ninety-seven percent of those who reported having a lower electric bill said they felt the bill was lower as a result of appliances and light bulbs provided by the Program, and 83 percent said they felt their bill was lower because of actions taken by household members.

Clients were asked how Program services have affected their electric bills. Table III-18 shows that more than half of Cohort Three respondents reported that their bills were lower at the time of the survey than at the same time last year. Fifty-three percent reported lower bills, 22 percent reported no change, and seven percent

reported higher bills. The percentage of respondents who reported that they had lower electric bills at the time of the survey than at the same time the previous year has decreased consistently over the course of the three rounds of the survey. This could be related to differences in weather.

**Table III-18**  
**Changes in Electric Bill**

	<b>Cohort Three</b>	<b>Cohort Two</b>	<b>Cohort One</b>
<b>Lower</b>	53%	62%	74%
<b>No change</b>	22%	19%	15%
<b>Higher</b>	7%	4%	2%
<b>Don't know</b>	16%	15%	9%
<b>Not answered on mail survey</b>	1%	0%	

*i) PDA and SMOC~ERS Reports*

Observations in the field and interviews with providers revealed that many auditors were not using the PDA and reports as specified by Program protocols. The survey included many questions that addressed the use of these tools.

Respondents were asked if they received SMOC~ERS reports listing their usage by appliance, their top-ten electric uses, and an action plan. Table III-19 displays the responses to these questions. Sixty-two percent said they received a report showing their usage by appliance, 60 percent said they received a report showing their top-ten electric uses, and 69 percent said they received an action plan. A smaller percentage of clients in Cohorts Two and Three than in Cohort One reported that they received the report with the usage by appliance and the top-ten electric uses. A greater percentage of clients in Cohort Three than in Cohort Two reported that they received an action plan. The percentage of clients in each cohort who reported that they received these reports has consistently been in the 60 to 70 percent range. Service providers need to make sure to give each client all of the SMOC~ERS reports as required by Program protocols.

**Table III-19**  
**SMOC~ERS Reports Provided to the Client**

	Percent of Respondents who Reported That They Received SMOC~ERS Reports		
	Cohort Three	Cohort Two	Cohort One
<b>Usage by appliance</b>	62%	63%	77%
<b>Top-ten electric uses</b>	60%	63%	75%
<b>Action plan</b>	69%	62%	71%

Clients appeared to feel that the reports are a good education tool. Ninety-three percent said that they understood the reports, and 88 percent said that the reports were somewhat or very helpful.

*j) PIPP*

The survey addressed clients' understanding of PIPP and the impact of PIPP on their motivation to save energy. Although the EPP is open only to PIPP customers at this time, only 92 percent of respondents said they were on PIPP. Some of those who said they are not on PIPP may not be aware that they are on PIPP or may have left PIPP prior to service delivery or the survey.

PIPP participants were asked about their participation in the Program. Most respondents reported that they had been on PIPP for three years or more. Clients were aware that their arrearages had increased since they began participating in PIPP. Seventeen percent of high-use clients reported that they owed more than \$500 when starting on PIPP, and 41 percent reported that at the time of the survey they owed more than \$500. Four percent reported that they owed more than \$2000 when they started on PIPP, and 11 percent reported that at the time of the survey they owed more than \$2000. These data show that more recent survey respondents have lower levels of arrearages, probably related to the fact that they have been on PIPP for shorter periods of time.

**Table III-20**  
**Initial and Current Arrearages**  
**By Service Type**

	Arrearages When Started on PIPP					Current Level of Arrearages				
	Cohort Three		Cohort Two		Cohort One	Cohort Three		Cohort Two		Cohort One
	High Use <sup>1</sup>	Mod Use <sup>1</sup>	High Use <sup>2</sup>	Mod Use <sup>3</sup>	High Use <sup>4</sup>	High Use <sup>1</sup>	Mod Use <sup>1</sup>	High Use <sup>2</sup>	Mod Use <sup>3</sup>	High Use <sup>4</sup>
<b>\$0</b>	3%	17%	9%	19%	17%	7%	0%	1%	3%	1%
<b>\$1 - \$100</b>	6%	6%	4%	3%	5%	4%	8%	9%	3%	2%
<b>\$101 - \$500</b>	14%	23%	21%	19%	16%	19%	22%	14%	13%	6%
<b>\$501-\$1000</b>	6%	14%	4%	5%	12%	9%	14%	8%	16%	17%
<b>\$1001-\$2000</b>	7%	5%	1%	14%	13%	21%	11%	10%	30%	23%
<b>&gt; \$2000</b>	4%	4%	6%	2%	10%	11%	17%	31%	11%	26%
<b>Don't know</b>	50%	29%	37%	33%	20%	19%	25%	9%	19%	18%
<b>Not asked</b>	10%	2%	19%	5%	7%	10%	2%	19%	5%	7%

<sup>1</sup> 63 Respondents. <sup>2</sup> 54 Respondents. <sup>3</sup> 62 Respondents. <sup>4</sup> 129 Respondents.

Note: Responses are not shown for TEE respondents, as they represent a small percentage of those surveyed.

Except during the summer, PIPP customers' electric bills are based on their income rather than on their actual usage. The survey aimed to measure clients' motivation to reduce electricity usage while on PIPP, even though their bills for most of the year are not dependent on their usage. Clients were asked if there were any benefits of reducing their usage while on PIPP. Sixty-seven percent said that there are benefits to reducing usage.

Respondents who said that they felt that there are benefits to them of reducing their usage while on PIPP were asked to identify those benefits. Table III-21 illustrates the benefits respondents identified. Thirty-three percent said that by reducing their usage they would save money or reduce their bills, and 24 percent said they would be able to prevent future debt or reduce future arrears. Only five percent said that by reducing their usage they would be able to reduce their summer electric bills. Responses total to more than 100 percent, as respondents could provide more than one response.

**Table III-21**  
**Benefits of Reducing Usage While on PIPP**

	<b>Cohort Three</b>	<b>Cohort Two</b>	<b>Cohort One</b>
<b>Save money/Reduce Bills</b>	33%	39%	39%
<b>Prevent future debt/Reduce future arrears</b>	24%	20%	25%
<b>Reduce usage</b>	8%	8%	4%
<b>Reduce summer electric bills</b>	5%	5%	3%
<b>Save energy/Good for environment</b>	6%	4%	3%
<b>Other</b>	3%	4%	2%
<b>Don't know</b>	2%	2%	3%
<b>Not answered on mail survey</b>	1%	0%	0%
<b>Not asked</b>	33%	35%	27%

#### **4. Recommendations**

##### ***a) Provide Additional Education Training***

Many clients do not have a good understanding of their responsibility, the service provider's responsibility, or the benefits of participating in the Program. Many clients report that the provider did not review their electric bill or provide them with copies of the SMOC~ERS reports. Providers need to be given clear guidelines as to what is expected as part of the visit, including that the Program responsibilities and benefits are described to the participant when the partnership is established. The fact that nine percent of respondents reported that they were somewhat or very disappointed with the education that was provided reinforces this finding.

##### ***b) Review EPP Protocols with Providers***

While the percentage of clients who reported that the provider left bulbs for them to install in their home has declined from previous rounds of the survey, nearly 30 percent of clients still reported that bulbs were left. This practice is inconsistent with Program protocols, and it may lead to CFLs not being installed or not being installed in cost-effective locations. The requirement that all bulbs be installed while the auditor is in the home should be reinforced.

***c) Require Providers to Replace Failed Bulbs***

Based on the client survey, we estimated that six percent of CFLs that are replaced fail by the time of the interview, approximately six months after services were received. Agencies should be required to provide replacement bulbs for the clients.

***D. Program Data***

APPRISE collected data from the providers on other programs provided to EPP participants since the delivery of EPP services. APPRISE requested this information from providers for all respondents to the client survey.

**1. Goals of the Evaluation Activity**

Clients are eligible for many other utility and government programs that may affect the energy usage of their home. These programs may be delivered either in conjunction with the EPP or independently from the EPP. To distinguish the impact of the EPP from other programs where clients may have received services, it is necessary to document the other services received by clients since receipt of EPP services.

**2. Design/Rationale**

APPRISE contacted all provider agencies to collect information on other programs. APPRISE asked these agencies to provide information on other services received, as well as other agencies that may have provided services to EPP clients. These other agencies have also been contacted to determine if they provided services to these clients.

The first round of program data was collected in Spring 2003 for the first round of survey respondents. Additional rounds of program data were collected in Fall 2003 and Spring 2004 after the second and third rounds of the client survey were completed.

**3. Evaluation Findings**

***a) Number of Clients Receiving Other Program Services***

Table III-22 shows the number of other programs aimed to improve the home that clients have participated in since receipt of EPP services. Twenty to thirty percent of the sample participated in at least one other program that provided work on the home. There were several clients for whom data could not be obtained in rounds two and three of the survey, as COAD did not provide data for Round 2 and EANDC did not provide data for Round 3. Some of the agencies that HWDMC referred clients to also did not provide information on services received.

**Table III-22**  
**Number of Other Programs**  
**Received by EPP Survey Respondents**

Number of other Programs	Number of Clients		
	Round 3	Round 2	Round 1
<b>0</b>	99	96	88
<b>1</b>	30	23	33
<b>2</b>	0	0	5
<b>3</b>	0	2	3
<b>Unknown</b>	30	28	0
<b>TOTAL</b>	159	149	129

***b) Types of Programs That Clients Have Received***

Table III-23 displays the programs that clients have received. Fifty-five clients received WAP services since participating in EPP. Clients also received services from utility programs, including Community Connections, a program that provides roofing, light bulbs, and electrical wiring, and other utility weatherization programs.

**Table III-23**  
**Types of Other Programs**  
**Received by EPP Survey Respondents**

	Number of Clients		
	Round 3	Round 2	Round 1
<b>WAP</b>	25	7	23
<b>Community Connections – First Energy</b>	0	9	20
<b>Cleveland Electric Illuminating</b>	0	5	0
<b>Warm Choice – Columbia Gas</b>	2	3	6
<b>Housewarming – Dominion East Ohio</b>	1	3	1
<b>ODOD Cooling Program</b>	0	1	0
<b>Ohio Housing Trust – Project Hope</b>	0		
<b>Cinergy Weatherization</b>	0	1	0
<b>City of Cincinnati Emergency Home Repair</b>	0	1	0
<b>Toledo Edison</b>	0	0	1

## **4. Recommendations**

### ***a) Use Program Data in Impact Analysis***

In addition to WAP, many utility programs are available for low-income households in Ohio. These data should be used in the impact analysis to control for other work done in the home that will impact energy savings.

## ***E. SMOC~ERS Training Observations***

SMOC~ERS software, adapted from its original specifications for Ohio's Electric Partnership Program, has been an integral part of this Program. As expected with any new software product, there have been numerous problems with SMOC~ERS version 1.0 in the initial implementation of the Program. Over the past year and a half, OEE staff and Program service providers have worked together to identify fixes and enhancements to the software that could be incorporated into SMOC~ERS version 2.0 and would make the software easier to use in the field, on the PDA, and in the office, on the desktop. SMOC~ERS version 2.0 was released in August 2003. In order to prepare for its release, OEE conducted SMOC~ERS version 2.0 training sessions for EPP auditors and administrators.

### **1. Goals of the Evaluation Activity**

APPRISE observed training on the second version of SMOC~ERS in August 2003. The purpose of these observations and interviews was to document training procedures, as well as agency responses to the training.

### **2. Design/Rationale**

Four training sessions were held between July 29 and August 6, 2003. An evaluator from APPRISE attended the last two sessions held at Salt Fork State Park in Lore City, OH on August 5 and at Burr Oak State Park in Glouster, OH on August 6.

### **3. Evaluation Findings**

The goal of the training sessions was to train auditors and Program administrators on changes and enhancements made to SMOC~ERS version 2.0. A result of the training was to bring auditors and administrators from COAD and COAD sub-agencies together to discuss general issues and questions about the Program with OEE staff. Topics covered included:

- Changes to and use of specific screens on the PDA and desktop versions of the software
- Use of new features in the software



- How and when to implement fuel switches on dryers, hot water tanks, and heating systems
- Action, Measures, and Authorization reports/forms
- Invoicing based on install dates rather than audit dates
- EPP policy on obtaining landlord permission to do audits and install measures
- EPP policy on replaced incandescent light bulbs and showerheads

OEE staff covered technical issues relating specifically to changes in SMOC~ERS well, though they sometimes did not refer consistently to parts/names of the screens being discussed. For the most part, they thoroughly addressed questions about use of the software.

OEE staff did not appear to be as comfortable answering questions about EPP policy matters as they did answering questions about the software. When asked policy-related questions, the presenters sometimes gave contradictory or unclear answers, or presented EPP policy as it stands and then told the audience their personal feelings about what the policy should be. At times, OEE staff presented EPP policy clearly but then restated their position, or OEE's position, on issues when faced with resistance or tough questions from trainees. The discussions about implementing dryer fuel switch measures and obtaining landlord permission to conduct audits are two instances in which the presenters failed to give the audience clear and consistent policy direction.

#### **4. Recommendations**

##### ***a) OEE Policy Guidelines***

Auditors and Program administrators need to be presented with a clear definition of EPP policies and the expectations OEE has for service providers. When unsure of policies or answers to questions, the presenters should have consistently told the audience that they would follow-up on the issue at hand and get back to them. There should have been a clear conduit for information not provided during the training session to be provided to trainees at a later time.

#### ***F. Agency Survey***

APPRISE conducted the first round of the agency survey in Spring 2003, the second round in Fall 2003, and the third round in Spring 2004. While the first round of the survey was only targeted to agency managers at the 18 authorized providers, the second and third rounds were targeted to managers at the 9 authorized providers (several providers in the first round were no longer providers) and a sample of approximately 30 auditors at the authorized providers and their sub-agencies. The surveys were conducted by mail, fax, and e-mail.

## **1. Goals of the Evaluation Activity**

The purpose of the survey was to document agency adherence to prescribed Program procedures, services delivered by the agencies, and agencies' need for assistance in implementing the Program.

## **2. Design/Rationale**

The survey was designed in rounds to capture data from the agencies as the Program evolves. Each round of the survey has addressed slightly different issues.

- Round 1 – Spring 2003: This survey provided data on the high use component of the EPP.
- Round 2 – Fall 2003: This survey provided data on the moderate use component and the updated SMOC~ERS software.
- Round 3 – Spring 2004: This survey provided data on how the Program is working, and the extent to which certain Program elements have been introduced.
- Round 4 – Fall 2004
- Round 5 – Spring 2004

These rounds of the survey will allow for an analysis of all elements of the Program that are introduced and developed over the first four years of the Program. The time-series nature of the survey will also allow for an analysis of how the Program evolves over time.

## **3. Evaluation Findings**

### ***a) Agency Selection Process***

The second round of the survey was conducted in Fall 2003, shortly after the second provider RFP process was completed. The manager survey found that managers at the nine lead agencies were satisfied with the second agency selection process. Eight of the nine managers reported that they felt that the process was very fair, that OEE considered all important factors in choosing new agencies, and that they were very satisfied with the results of the process. However, managers reported that the application process was somewhat difficult.

### ***b) Client Recruitment***

The second round of the survey asked managers to rate the new recruitment lists, in comparison to the old recruitment lists. Overall, managers reported that the new

recruitment lists are better than old recruitment lists in making recruitment easier, providing more current contact information, and in providing enough high use and moderate use clients to serve. However, a minority of the managers felt that the new lists were no better than the old lists.

The third round of the survey asked managers to rate how well the recruitment lists work. Overall, managers reported that the recruitment lists are working somewhat well. For each of the criteria discussed, the mean rating was close to three.

**Table III-24**  
**OEE Recruitment Lists**  
**Manager Survey**

	Number of Managers Who Provided Each Rating			Mean Rating
	1-2	3	4-5	
<b>Provide current contact information</b>	3	3	3	3.1
<b>Provide enough high use clients to allow for a steady stream of EPP work</b>	3	1	5	3.4
<b>Provide enough moderate use clients to allow for a steady stream of EPP work</b>	3	3	2	2.8 <sup>1</sup>

<sup>1</sup> 8 Respondents.

### ***c) Training***

The second round of the survey asked managers and auditors to rate the effectiveness of the SMOC~ERS Version 2 training. Respondents who attended the training were asked to rate how effectively the training addressed certain topics on a scale of one to five, where one represents “not at all effectively,” and five represents “very effectively.” Table III-25 shows that, in general, both managers and auditors felt that the training was somewhat effective. Managers and auditors reported that leveraging costs, landlord permission, and taking away replaced items were covered least effectively. These topics were addressed in the survey because an APPRISE evaluator found that there was confusion about these issues in the SMOC~ERS v.2 training sessions observed.

**Table III-25**  
**Effectiveness of SMOC~ERS v.2 Training**

	Managers				Auditors			
	Number That Provided Each Rating			Mean Rating	Number That Provided Each Rating			Mean Rating
	1-2	3	4-5		1-2	3	4-5	
<b>Demonstrated use of new features in the software</b>	1	1	6	4 <sup>1</sup>	3	5	22	4
<b>Explained new features in the software</b>	1	1	6	4 <sup>1</sup>	2	4	24	4
<b>Answered questions about new features in the software</b>	0	2	6	4 <sup>1</sup>	3	3	24	4
<b>Answered questions about EPP policy on leveraging costs</b>	2	2	3	3 <sup>2</sup>	5	11	14	3
<b>Answered questions about EPP policy on landlord permission</b>	3	2	3	3 <sup>1</sup>	7	4	19	4
<b>Answered questions about EPP policy on taking away replaced items</b>	2	3	2	3 <sup>2</sup>	6	3	20	4 <sup>4</sup>
<b>Answered questions about EPP policy on calculating SIR</b>	1	1	5	4 <sup>2</sup>	3	3	23	4 <sup>4</sup>
<b>Answered other questions that arose</b>	0	2	4	4 <sup>3</sup>	1	5	20	4 <sup>5</sup>

<sup>1</sup> 8 respondents. <sup>2</sup> 7 respondents. <sup>3</sup> 6 respondents. <sup>4</sup> 29 respondents. <sup>5</sup> 26 respondents.

The third round of the agency survey asked managers whether additional training was needed on a number of specific EPP policies and procedures. Table III-26 shows that managers felt training was most needed for implementing fuel switches, identifying unaccounted for usage, and implementing field measures. Seven to eight of the nine managers said that training was needed in these areas. The areas managers felt training was least needed for were EPP policies and procedures and using SMOC~ERS. Only two managers reported that training was needed in these areas.

Table III-26 also displays auditors' responses to questions about additional training. Most auditors reported that they do not feel additional training is needed on the Program areas discussed in the survey. However, 12 auditors reported that additional training is needed on implementing field/custom measures, and 21 auditors reported that additional training is needed on implementing fuel switches. These components of the Program were introduced in August 2003, but many auditors are still confused about them. In addition, close to one third of auditors reported that more training is needed on comprehensive services. The areas auditors felt training was least needed for were EPP policies and procedures, communicating with clients, and using SMOC~ERS.

**Table III-26**  
**Additional Training Needed**  
**Manager Survey**

	Manager Survey		Auditor Survey			
	Round Three		Round Three <sup>1</sup>		Round Two <sup>3</sup>	
	Number	Percent	Number	Percent	Number	Percent
EPP policies and procedures	2	22%	4	13%	5	17% <sup>4</sup>
Using SMOC~ERS	2	22%	3	9%	7	23%
Implementing field/custom measures	7	78%	12	39% <sup>2</sup>	9	31% <sup>4</sup>
Implementing fuel switches	8	89%	21	68% <sup>2</sup>	18	64% <sup>5</sup>
Identifying unaccounted for usage	8	89%	--	--	--	--
Communicating with clients	4	44%	4	13%	2	7% <sup>4</sup>
Educating clients	5	56%	6	19%	3	10%
EPP audit protocols	3	33%	6	19%	5	17%
Comprehensive services	--	--	10	31%	--	--
Follow-ups	--	--	6	19%	--	--

<sup>1</sup> 32 Respondents. <sup>2</sup> 31 Respondents. <sup>3</sup> 30 Respondents. <sup>4</sup> 29 Respondents. <sup>5</sup> 28 Respondents

**d) Landlord Authorization**

An APPRISE evaluator observed SMOC~ERS v.2 training sessions held in August 2003. During these sessions, landlord authorization for EPP services was discussed. Because there did not appear to be complete understanding of the requirements regarding landlord approval, this topic was addressed in the second round of the agency survey. APPRISE asked each agency manager to explain who is responsible for obtaining landlord permission and at what point in the audit process that permission is sought.

At the two training sessions the evaluator attended, OEE trainers stated that landlord permission must be sought and granted before an auditor enters a client's home. The trainers added that State representatives would begin looking for signed authorization forms when doing evaluations in the field. Many auditors and agency managers in attendance at these two trainings expressed dissatisfaction with this element of EPP policy. In response to this dissatisfaction, the OEE trainees seemed to suggest that perhaps this policy should and would be changed. However, we are not aware of any planned policy changes in this area.

Managers were asked when they seek landlord permission and who is responsible for obtaining the permission. Four of the nine authorized providers said that they seek landlord permission prior to conducting the audit. The others said that they obtain permission when refrigerators are to be replaced or when weatherization

services are to be provided. Agencies said that clients, auditors, or managers were responsible for obtaining landlord permission.

**e) *Auditing Protocols***

In the second round of the agency survey, auditors were asked about the number of visits made to the average client's home and the length of the average audit. Auditors reported that high and moderate use audits usually require one visit, and TEE audits usually require two visits. They reported that, on average, high use audits take three hours, moderate use audits take two hours, and TEE audits take four hours. Auditors reported visit lengths that ranged from two to four hours for high use audits, one to four hours for moderate use audits, and two and a half to five and a half hours for TEE audits.

In the second round of the survey, auditors were asked if they meter all, some, or no refrigerators and freezers in clients' homes. Table III-27 shows that most auditors reported that they meter all refrigerators and freezers in both high and moderate use audits.

**Table III-27**  
**Number of Refrigerators and Freezers Metered**

Number of Refrigerators and Freezers Metered	Number of Auditors	
	High Use	Moderate Use
<b>All</b>	25	18
<b>Most</b>	4	3
<b>Some</b>	1	1

Auditors were also asked in the second round of the survey if the refrigerators and freezers that they replace in clients' homes are used all year. All auditors said that 100 percent of those refrigerators and freezers that are replaced in both high and moderate use audits are used all year.

The second round of the survey asked auditors how often there are opportunities to do two-for-one refrigerator and freezer replacement and how often it is actually done. Table III-28 shows that auditors did not feel that there were many opportunities to do two-for-one appliance replacement in clients' homes. Auditors reported that such opportunities existed in only 12 percent of high use and in 11 percent of moderate use clients' homes, and that two-for-one replacement was done in only 7 percent of high use and 8 percent of moderate use homes.

**Table III-28**  
**Two-For-One Refrigerator and Freezer Replacement**

	Mean Percent of Audits	
	High Use	Moderate Use
<b>Two-for-one replacement opportunities</b>	12% <sup>1</sup>	11% <sup>2</sup>
<b>Two-for-one replacement done</b>	7% <sup>3</sup>	8% <sup>4</sup>

<sup>1</sup> 29 respondents. <sup>2</sup> 21 respondents. <sup>3</sup> 27 respondents. <sup>4</sup> 19 respondents.

Because refrigerator/freezer replacement represents a large percentage of energy savings for the Program, the second round of the auditor survey addressed the kinds of measurements auditors take and the kinds of education they provide related to these appliances. As shown in Table III-29, in most audits, auditors do not provide clients with education about the use of their refrigerators and freezers, and do not take measurements to help assess the efficiency of the appliances aside from taking an electric meter reading. For high use audits, auditors reported that they:

- Measure the inside temperature of refrigerators and freezers in 41 percent of homes
- Measure the ambient temperature when metering refrigerators and freezers in 40 percent of homes
- Educate clients about the inside temperature of their refrigerators and freezers in 55 percent of homes
- Educate clients about the proper use of the anti-condensate heater in 48 percent of homes

**Table III-29**  
**Refrigerator/Freezer Measurements and Education**

	Mean Percent of Audits	
	High Use	Moderate Use
<b>Measure the inside temperature of all refrigerators/freezers</b>	41% <sup>1</sup>	29% <sup>4</sup>
<b>Measure the ambient temperature when monitoring</b>	40% <sup>2</sup>	27% <sup>5</sup>
<b>Educate clients about the inside temperature of their refrigerators</b>	55% <sup>2</sup>	44% <sup>5</sup>
<b>Educate clients on the proper use of the anti-condensate heater</b>	48% <sup>3</sup>	40% <sup>6</sup>

<sup>1</sup> 27 respondents. <sup>2</sup> 29 respondents. <sup>3</sup> 28 respondents. <sup>4</sup> 19 respondents. <sup>5</sup> 21 respondents. <sup>6</sup> 20 respondents.

Auditors were asked, in the second and third rounds of the survey, what appliances, other than refrigerators and freezers, they regularly meter during audits. In the third round of the survey, 17 auditors listed at least one appliance that they meter in addition to refrigerators and freezers, and one auditor listed as many as eleven

appliances. The mean number of appliances metered, other than refrigerators and freezers, was two. Table III-30 shows the appliances that auditors reported metering.

**Table III-30**  
**Appliances Metered During Audits**  
**Auditor Survey**

	Number of Auditors who Meter Appliance	
	Round Three	Round Two
Medical equipment	9	3
TV	8	4
Electric space heater/ heater/furnace	7	6
Fan	6	4
Air conditioner	5	5
Dehumidifier	0	2
Microwave	5	2
Entertainment/game equipment	3	1
Kitchen appliances	3	0
Stereo	3	1
Fish tank	2	2
Power equipment/tools	2	0
Waterbed	2	0
Clothes washer	1	0
Computer	0	1
Dorm refrigerator	1	1
Exercise equipment	0	1
Fax machine	0	1
Heat pump	0	1
Pump motor	0	1
VCR	1	1
Water cooler	1	3
Water heater	1	1
Other appliances	6	0

*f) Fuel Switches*

In the third round of the agency survey, both auditors and managers were asked to identify how many domestic hot water tank, heating system, and dryer fuel switches they or their agencies have implemented. Only two agencies reported that they had done fuel switches, and a total of four fuel switches have been done.



In Round Two of the survey, managers were asked about obstacles to the implementation of fuel switches. The responses that were given are summarized below.

- Six managers reported that the cost of doing fuel switches presents an obstacle to implementing them.
- Two managers reported that Metro Housing's requirement that certified electricians do work in units is a problem.
- Five managers reported that there are not enough opportunities in clients' homes to do fuel switches.
- Two managers reported that EPP policy on fuel switches is a problem.

Findings from Round Two of the survey made it clear that Program managers felt more training was needed on fuel switches and that they were unclear about how and when to implement them. Findings from Round Three of the survey show that this measure is not being used and imply that there still exists a need for more training on and more clarification of fuel switch protocols and policies.

The Round Three survey asked auditors and managers to describe the switches they have done or explain why they have not done any. Managers provided the following reasons why fuel switches have not been done:

- Clients were reluctant to allow the switches because they did not want to pay for another fuel
- The agency has not come across many opportunities for fuel switches, especially not in owner-occupied homes
- The client did not want the fuel switch
- Any fuel switch would require multiple visits to the client's home and the involvement of staff members other than the auditor, so it would not be a simple process
- Do not have enough knowledge to identify the criteria that demand a fuel switch (two managers)

Auditors were also asked to describe the fuel switches they have done or to explain why they have not done any. One auditor said he switched one electric hot water heater to a gas water heater, and another said he had performed a switch on a furnace. Auditors provided the following reasons for why fuel switches have not been done:

- Training on fuel switches is needed (seven auditors)
- They have not had the opportunity to do any switches (four auditors)
- Most clients are in rural areas where natural gas is not available and most of those to whom it is available are using it already
- The cost of running a new gas line to the house was too high

- Clients do not want to have a second fuel bill, and therefore do not want switches
- SIRs are usually not high enough to warrant fuel switches
- It is not in the job description to do fuel switches
- Lack of familiarity with fuel switches
- They have to be done through the Housewarming program.
- There is “no way fuel switches can be performed by this Program at this time”
- One agency does not support fuel switches and told an auditor not to do them

***g) Field/Custom Measures***

Both auditors and managers were asked if they or their agencies had implemented any field/custom measures. Table III-31 shows that four managers and four auditors reported that they have implemented field/custom measures.

**Table III-31**  
**Field/Custom Measures**  
**Manager and Auditor Surveys**

	Managers		Auditors	
	Round Three	Round Two	Round Three <sup>1</sup>	Round Two <sup>2</sup>
<b>Yes, have implemented field/ custom measures</b>	4	2	4	4
<b>No, have not implemented field/ custom measures</b>	5	7	27	23

<sup>1</sup> 31 Respondents. <sup>2</sup> 27 Respondents.

Managers who reported that their agencies had implemented field/custom measures were asked to describe the measures that were implemented and why they were needed. Managers described the following field measures.

- A well pump was replaced because the old one ran continuously.
- A waterbed cover was listed as a field/custom measure.
- A sump pump and a well pump were repaired because they were running continuously.
- A hot water heater was replaced because it was leaking.
- Showerheads and aerators were installed, and these items had to be listed as field/custom measures for people with gas hot water who have wells.

Managers who reported that their agencies had not implemented any field/custom measures were asked to explain why they had not. Managers provided the following reasons that field measures were not implemented:

- The opportunity to do so has not arisen (two managers)
- Auditors did not receive training on field measures until May 2004
- Don't have enough knowledge about field measures to implement them

Those auditors who reported that they had experience with field/custom measures were asked to explain what field/custom measures they have implemented and why those measures were necessary. They described the following measures.

- A heat pump was installed and this was the only way to enter it in SMOC~ERS.
- Work was done on a water heater because it was leaking and ran all the time.
- Showerheads and aerators had to be listed as field/custom measures for clients with gas hot water heaters.
- Well pump repairs because it was running constantly.

Those auditors who reported that they have not had experience with field/custom measures were asked to explain why they have not yet implemented such measures. Auditors provided the following reasons why field measures have not been implemented:

- Lack of understanding of field/custom measures or need for more training (ten auditors)
- There has been no opportunity to implement field/custom measures (eight auditors)

#### *h) Quality Control*

Managers were asked about forms of quality control used and the frequency with which they are employed for the different types of audits. Table III-32 shows the number of agencies that perform each type of quality control for each type of audit.

**Table III-32**  
**Number of Agencies Using Quality Control**  
**Manager Survey**

	Round Three			Round Two			Round One
	High Use <sup>1</sup>	Moderate Use <sup>2</sup>	Tee <sup>3</sup>	High Use <sup>1</sup>	Moderate Use <sup>1</sup>	Tee <sup>3</sup>	High Use
<b>Follow-up data review</b>	7	6	5	7	7	6	10 <sup>4</sup>
<b>Follow-up phone call</b>	7	6	4	6	6	4	9 <sup>5</sup>
<b>On-site inspection</b>	6	5	5	6	5	4	7 <sup>4</sup>
<b>Visits observed</b>	7	6	5	4	4	5	7 <sup>4</sup>

<sup>1</sup> 9 Respondents. <sup>2</sup> 8 Respondents. <sup>3</sup> 6 Respondents. <sup>4</sup> 14 Respondents. <sup>5</sup> 13 Respondents.

Table III-33 shows the number of agencies that performed zero, one, two, three, or all methods of quality control discussed in the survey. The number of agencies that performed no quality control on high use audits has decreased over the survey period. In Round Three, five managers reported that their agencies performed all

methods of quality control on high use audits, and four reported that they performed all methods of quality control on moderate use and TEE audits.

**Table III-33**  
**Number of Agencies Using One, Some,  
Or All Methods Of Quality Control**  
**Manager Survey**

	Round Three			Round Two			Round One
Number of Methods	High Use <sup>1</sup>	Moderate Use <sup>2</sup>	Tee <sup>3</sup>	High Use <sup>1</sup>	Moderate Use <sup>1</sup>	Tee <sup>3</sup>	High Use <sup>4</sup>
0	1	1	1	2	2	0	3
1	1	1	0	1	1	1	3
2	0	0	0	0	1	1	0
3	2	2	1	2	1	0	6
4	5	4	4	4	4	4	3

<sup>1</sup> 9 Respondents. <sup>2</sup> 8 Respondents. <sup>3</sup> 6 Respondents. <sup>4</sup> 15 Respondents.

Table III-34 shows the mean percentage of audits that received each type of quality control. A higher mean percentage of TEE audits than the other types of audits received each type of quality control. The mean percentage of high use audits that received all forms of quality control has decreased. The percent of visits that receive quality control may have declined because the numbers of homes visited has increased and because provider agencies became more comfortable with the Program. However, our interviews with clients and results from this survey show that quality control is still needed.

**Table III-34**  
**Mean Percent of Homes That Receive**  
**Each Method of Quality Control**  
**Manager Survey**

	Mean Percent of Homes that Receive Each Method of Quality Control						
	Round Three			Round Two			Round One
	High Use <sup>1</sup>	Mod Use <sup>2</sup>	Tee <sup>3</sup>	High Use <sup>1</sup>	Mod Use <sup>1</sup>	Tee <sup>3</sup>	High Use
Follow-up data review	36%	33%	72%	51%	50%	84%	62% <sup>4</sup>
Follow-up phone call	20%	20%	38%	25%	25%	31%	32% <sup>5</sup>
On-site inspection	11%	10%	57%	15%	8%	39%	25% <sup>4</sup>
Visits observed	9%	9%	39%	3%	3%	25%	16% <sup>4</sup>

<sup>1</sup> 9 Respondents. <sup>2</sup> 8 Respondents. <sup>3</sup> 6 Respondents. <sup>4</sup> 14 Respondents. <sup>5</sup> 13 Respondents.

*i) Overall Program Ratings*

Respondents were asked to rate how well certain components of the Program are working based on the scale in Table III-35.

**Table III-35**  
**Overall Rating of Program Components**  
**Rating Scale**

	Rating Scale
<b>1</b>	Not at all well
<b>3</b>	Somewhat well
<b>5</b>	Very well

Table III-36 shows that managers gave SMOC~ERS, the customer education component of the Program, the ability of Program policies and procedures to facilitate Program administration, and the Program in general a mean rating of about four, meaning that the Program is operating very well overall.

**Table III-36**  
**Overall Rating of Program Components**  
**Manager Survey**

	Round Three				Round Two			
	Number of Managers Who Provided Each Rating			Mean Rating	Number of Managers Who Provided Each Rating			Mean Rating
	1-2	3	4-5		1-2	3	4-5	
<b>SMOC~ERS</b>	0	2	7	4.0	1	2	6	4.0
<b>Client education</b>	0	3	6	3.9	1	1	7	3.8
<b>EPP policies and procedures</b>	0	3	6	4.0				
<b>Program, overall</b>	0	2	7	4.2	0	2	7	4.3

Table III-37 shows that auditors also gave each component of the Program asked about in the survey a mean rating of about four. However, a few auditors noted that the Program was not working well.

**Table III-37**  
**Overall Rating of Program Components**  
**Auditor Survey**

	Round Three				Round Two			
	Number of Auditors Who Provided Each Rating			Mean Rating	Number of Auditors Who Provided Each Rating			Mean Rating
	1-2	3	4-5		1-2	3	4-5	
<b>SMOC~ERS</b>	2	11	19	3.8	1	8	20	3.9 <sup>3</sup>
<b>Client education</b>	3	14	15	3.6	1	5	23	4.2 <sup>3</sup>
<b>EPP policies and procedures</b>	2	8	22	3.9				
<b>Program, overall</b>	2	6	24	4.1	1	4	25	4.2

<sup>1</sup> 32 Respondents. <sup>2</sup> 30 Respondents. <sup>3</sup> 29 Respondents.

#### 4. Recommendations

##### *a) Provide Clear and Consistent Information on EPP Policies and Procedures*

Presenters at the August 2003 SMOC~ERS training did not provide clear guidance as to OEE policy on landlord leveraging costs, landlord permission, and taking away replaced items. Auditors reported in the survey that the training only somewhat effectively addressed these issues. OEE should provide clear policy statements as to EPP requirements in these areas.

##### *b) Provide Additional Training on Field Measures and Fuel Switches*

Managers and auditors were likely to report that additional training was needed on field measures and fuel switches. Many also reported that they had not implemented these measures because of the need for a better understanding of the procedures. OEE should provide additional training in these areas.

##### *c) Provide Additional Baseload Training*

Eight of the nine managers who were surveyed responded that additional training was needed on identifying sources of high electric usage. Auditors need more training to provide measures beyond light bulbs and refrigerators.

##### *d) Provide Incentives for Two-For-One Refrigerator Replacement*

Auditors reported that such two-for-one opportunities existed in only 12 percent of high use and in 11 percent of moderate use clients' homes, and that two-for-one replacement was done in only 7 percent of high use and 8 percent of moderate use homes. OEE should provide incentives for auditors to find these opportunities and for clients to accept the measure. Agencies could receive extra fees for these measures and clients could receive special options on the refrigerators.

***e) Require Agencies to Provide Additional Quality Control***

A few agencies still do not provide data review, follow-up phone-calls, inspections of completed work, and on-site observation of audits. OEE should specify the type and level of quality control that should be conducted by agencies.

## IV. Summary of Findings and Recommendations

There have been significant improvements in the design and implementation of the Electric Partnership Program in the second year of operation. Some of the key accomplishments over the last year have been:

- Program production continued to increase in the third year of the EPP.
- Additional improvements have been made to SMOC~ERS.
- A Tablet PC has been tested and will be adopted.
- Program documentation has been improved.
- Procedures have been developed for quality control.
- An education notebook has been distributed.

The principal suggestions for continued improvements to the Program include increased production in certain utility service territories, additional education and baseload training, increased quality control, clarification of certain OEE policy guidelines, and incentives to increased refrigerator two-for-one swaps.

### A. Findings

#### 1. Improvements in The Third Year of the EPP

Following a slow start and vast improvements in the second year of Program implementation, the third year has seen increased improvement and accomplishments.

- *Production has continued to increase:* Following the decrease in authorized providers from 18 to nine, there was a significant drop in production in the first quarter of the third fiscal year. However, production rebounded quickly. Production for the third year of the Program was 9,780 jobs, compared to 7,628 in the second Program year.
- *Administrative and oversight procedures have been improved:* OEE updated and improved the EPP policies and procedures manual. They created monitoring forms to collect systematic information on agency visits, inspections, and on-site observations.
- *Cost ceilings for administrative/audit fees:* OEE set cost ceilings for the audit and administrative fees for the third year of the Program. The ceiling for baseload services was set at \$225, as compared to fees that averaged \$343



statewide, and that ranged as high as \$509 for the first two years of the Program. These are reasonable fees that provide greater savings for the Ohio ratepayers.

- *New Version of SMOC~ERS:* A new version of SMOC~ERS was released in August 2003. The new version provided fuel switching and custom measure modules, allowed for billing of multiple trips to the clients' home, and enhanced the method for selecting client actions.
- *Tablet PC has been tested:* Agencies have tested the Tablet PC as a replacement for the PDA. They report that it is easier to use and can store information on a much larger number of jobs. There is a plan to encourage agencies to adopt the Tablet PC in the next Program year.
- *An education notebook has been distributed:* A PowerPoint education notebook was provided on disk to providers. Monitors have reported that they have seen auditors make use of the notebook as a customer education tool.

## **2. Additional Advances Expected in Next Year**

There are many additional improvements planned for the EPP in the next year.

- *Additional SMOC~ERS enhancements:* OEE plans to continue improving the SMOC~ERS software. They are considering adding a screen to allow auditors to view monthly usage, eliminating the usage match-up, changing the algorithm for calculating cost-effectiveness of CFLs, correcting the ambient temperature adjustment for refrigerator and freezer usage, improving invoicing procedures, adding management reports, and fixing the discount rate.
- *EPP Brochure:* A brochure was developed for the EPP and distributed to agencies in July 2004. Agencies can mail the brochure to potential clients.
- *EPP Letter:* OEE will be sending another mass mailing letter. This letter will be targeted to high users and a defined number will be sent to each county. OEE will do a staggered mailing over four to five months so that the providers will not be overwhelmed.
- *Low Use Pilot:* A low use client pilot will be introduced. This pilot will target PIPP customers with usage below 4,000 kWh annually, the cutoff for the moderate use Program. The audit will not be cost effective for these customers, so they will try workshops, and also a mailing that may include an educational video and some low-cost measures.
- *Improved Definition of Comprehensive Services:* OEE will work to improve the understanding and delivery of comprehensive services so that it is delivered consistently throughout the state.

- *Move Toward Tablet PC:* The testing of the Tablet PC that was done in the past year resulted in very positive reviews. OEE will work with the agencies to move toward this hardware.

### **3. Program Administration**

OEE has created forms and procedures for documenting auditor performance. However, implementation of these procedures needs to be increased. Documentation from appliance vendors and definition of some EPP policies need to be improved.

#### ***a) Monitoring Forms Have Been Developed***

Last year, the OEE monitors reported that observation of the audits was viewed as technical assistance rather than monitoring. This year they reported that monitoring is now viewed as quality control. Systematic procedures for documenting auditor performance have been developed over the past year. However, these reporting forms were only implemented in about a dozen visits this year, and there is not a systematic process for using the results to inform the training process.

#### ***b) Documentation from Appliance Vendors Needs to Be Improved***

Monitors reported that agencies are having difficulty obtaining proper certificates of disposal from the refrigerator vendors. One monitor reported that he only saw proper documentation at one of the five agencies that he visited.

#### ***c) Some OEE Policy Guidelines Have Not Been Clearly Defined***

Trainers at the SMOC~ERS training did not provide clear or consistent answers to questions about EPP policy on landlord permission for service delivery. Auditors reported in the agency survey that the training only somewhat effectively addressed the issues of landlord leveraging costs, landlord permission, and taking away replaced items.

### **4. Service Delivery**

Areas for improvement in service delivery include increased production in some utility service territories, improved education delivery, and increased implementation of two-for-one refrigerator swaps. Providers need additional training on CFL protocols, field measures, and fuel switches.

#### ***a) Production in Cinergy and DP&L Service Territories Should be Increased***

The analyses of SMOC~ERS data and OEE financial statistics showed that only about ten percent of clients who have been referred for the EPP have been served in Cinergy's and DP&L's service territories, and that agencies in these territories have utilized less than half of the funding that is available.

***b) Education Still Needs Improvement***

Monitors reported that the education component of the audit is still the weak point. Many auditors are still not doing an adequate job of explaining the Program, establishing and confirming the partnership, reviewing the clients' bills, explaining what will be done during the visit, and reviewing the reports at the end of the visit.

The client survey found that many clients do not have a good understanding of their responsibility, the service provider's responsibility, or the benefits of participating in the Program. Many clients reported that the provider did not review their electric bill or provide them with copies of the SMOC~ERS reports. Nine percent of respondents reported that they were somewhat or very disappointed with the education that was provided.

***c) Providers are not Following Some Important Program Protocols***

Nearly 30 percent of clients reported that the provider left bulbs for them to install after the provider left the home. This practice is inconsistent with Program protocols, and it may lead to CFLs not being installed or not being installed in cost-effective locations.

***d) CFL Failure Rate is High***

Based on the client survey, we estimated that six percent of CFLs that are replaced fail by the time of the client survey, approximately six months after services were received.

***e) Managers and Auditors are Not Comfortable with Field Measures and Fuel Switches***

Managers and auditors were likely to report in the agency survey that more training was needed on field measures and fuel switches. Many also reported that they had not implemented these measures because of the need for a better understanding of the procedures.

***f) Two-For-One Refrigerator Swaps***

Auditors reported in the agency survey that opportunities for such replacement existed in about ten percent of homes and that they were implemented in about seven percent of homes. Analysis of the SMOC~ERS database shows that there are many homes that receive two refrigerator replacements, and that are potential opportunities for two-for-one swaps. This is an example of an opportunity to significantly increase electric savings.

**5. Technology**

Monitors reported that some auditors have given up on the PDA and are using paper forms to record data from the visit. More problematic is the fact that they do not enter

the data into the software until they return to the office. This does not allow for an investigation of electric use when the recorded use does not match the customer's bills.

## **6. Quality Control**

Additional quality control should be provided by monitoring staff and agencies.

### ***a) Monitoring Staff Is Insufficient***

Three monitors from OEE have been assigned to provide quality control for the EPP. These monitors have had other responsibilities related to the EPP and to the Home Weatherization Assistance Program (HWAP) and have not been able to devote all of their time to Program data review and monitoring. While these monitors have had the opportunity to visit each agency at least once, they have not been able to observe all of the auditors or to observe how auditors are progressing over time.

### ***b) Quality Control Provided by Agencies***

A few agencies still do not provide data review, follow-up phone calls, inspections of completed work, and on-site observation of audits.

## **B. Recommendations**

### **1. Program Administration**

#### ***a) Additional Staff Time Allocated to Monitoring and On-Site Training***

OEE monitors reported that they have visited each agency at least once for observation of the audit and have returned to some agencies. However, some agencies have many auditors, and not all auditors have been observed. Additionally, findings from these observations indicate that additional observations and on-site training is needed to improve the quality of the audits and increase the potential savings from the Program.

#### ***b) Create Clear EPP Policy Guidelines and Train Staff on Those Guidelines***

Providers need to be given clear and consistent information about EPP policies and procedures. Decisions should be made on all issues that have been raised, and these decisions should be communicated to all OEE staff and providers.

#### ***c) Increased Review of Appliance Disposal Documentation***

Monitors found that this documentation is often missing. OEE should undergo a systematic review of this documentation and, if necessary, work with agencies to make sure that proper documentation is obtained.

***d) Work to Increase Production in Cinergy and DP&L Service Territories***

OEE should work with the agencies in these service territories to ramp up production. If necessary, additional providers should be recruited for these areas.

**2. Training**

***a) Provide Additional Education Training***

Findings from the on-site observations conducted by the monitors and findings from the client survey point to a need for additional education training.

***b) Provide Additional Baseload Training***

Monitor reports show that additional baseload training is needed. Managers reported in the agency survey that additional training is needed on identifying sources of high electric usage.

***c) Provide Additional Training on Field Measures and Fuel Switches***

Auditors have not implemented these measures and report that they are not comfortable with the procedures. Additional training is needed in these areas.

***d) Review EPP Protocols with Providers***

Providers are still not following protocols related to bulb replacement. These protocols should be reviewed with the providers.

**3. Technology**

***a) Encourage Adoption of Tablet PC's***

Some auditors are still uncomfortable with the PDA and have abandoned the in-field usage matching. OEE should encourage agencies to move toward the Tablet PC, which may be more user friendly and less prone to data loss.

**4. Service delivery**

***a) Require Providers to Replace Failed Bulbs***

The client survey estimated a six percent failure rate for CFLs. Providers should be required to return to homes and replace bulbs that fail in the first year.

***b) Provide Incentives for Two-For-One Refrigerator Replacement***

OEE should provide incentives for auditors to find these opportunities and for clients to accept the measure. Agencies could receive extra fees for these measures and clients could receive special features on the refrigerator if they accepted a two-for-one swap.

**5. Quality control**

***a) Increase Level of OEE Quality Control***

While monitors reported that each agency was visited at least once, agencies have several auditors, and monitors have not had the opportunity to observe many of the auditors or to determine whether individual auditors are improving. The number of quality control visits to each agency should be increased to ensure that all auditors are performing at the level expected by the Program.

***b) Develop Requirements for Agency Quality Control***

Quality control provided by the agencies should be increased. OEE should specify the type and level of quality control that should be provided by agencies.

## Appendix

Appendix A: Round Two Client Survey

Appendix B: Round Three Client Survey

Appendix C: Round Two Agency Survey

Appendix D: Round Three Agency Survey