LARGE FILING SEPARATOR SHEET

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APPLICATION & SCHEDULES

EXHIBIT NO._____

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company, Individually and, if Their Proposed Merger is Approved, as a Merged Company (collectively, AEP Ohio) for an Increase in Electric Distribution Rates	Case No. 11-351-EL-AIR Case No. 11-352-EL-AIR
In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company, Individually and, if Their Proposed Merger is Approved, as a Merged Company (collectively AEP Ohio) for Tariff Approval	Case No. 11-353-EL-ATA Case No. 11-354-EL-ATA
In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company, Individually and, if Their Proposed Merger is Approved, as a Merged Company (collectively AEP Ohio) for Approval to Change Accounting Methods	Case No. 11-356-EL-AAM Case No. 11-358-EL-AAM

VOLUME SIX

STANDARD FILING REQUIREMENTS
SCHEDULE S-4.2

(PART 4 of 4)

Filed February 28, 2011

American Electric Power

and subsidiaries

Columbus Southern Power Company and Ohio Power Company

DBA as AEP Ohio

Executive Summary Applicant Utilities'

Management Policies, Practices and Organization

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Information Technology

SFR Reference

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I. Policy and Goal Setting

The vision of American Electric Power's Information Technology (IT) Department is to be a sustainable provider of information technology services who takes pride of ownership, delivers quality solutions, solves problems, enables business strategies, delights users and serves the dynamic business needs of its customers in everything the department does. The department partners with AEP business units to enable the efficient operation of the generation, transmission and distribution functions of the operating companies and centralized corporate business functions.

IT goals are set annually by the vice president and chief information officer (CIO) in support of corporate goals as established by senior corporate management. AEP's corporate mission is stated as "Bringing comfort to our customers, supporting business and commerce, and building strong communities."

To support that mission, AEP has articulated seven corporate strategies:

- safety, performance and value in electric power generation, transmission and distribution;
- respect our people and give them the opportunity to be as successful as they can be;
- meet the energy needs of our customers in ways that improve their quality of life and protect the environment today and for generations to come;
- improve the environmental and safety performance of our generating fleet and add to that fleet for growth;
- set the standards for safety, efficiency and reliability in our electric transmission and distribution systems;
- nurture strong and productive relationships with our public officials and regulators; and
- provide our leadership, integrity and compassion as a corporate citizen of every community we serve.

As a centralized support service, IT seeks to bolster these strategies by setting goals and policies guided by the business requirements of the utility companies, including Ohio Power and Columbus Southern Power, doing business as AEP Ohio. Centralization allows AEP to economize through the development of common scalable solutions while building in the flexibility to meet local jurisdictional needs.

With those corporate goals in mind, IT has developed its mission to leverage common, standardized and reliable technologies with the following focus areas:

- Reliability – Provide high quality, reliable, and secure information and communications systems to support AEP's business and operational requirements.
- Agility – Enable an agile enterprise by:
  - dynamically responding to corporate priorities; and
  - providing a framework for scaling and enhancing existing business processes, and adopting new business processes.

- Integration – Enable an integrated enterprise by:
  - connecting business processes across organizational boundaries; and
  - providing consistent information for decision support.
- Simplicity – Reduce complexity that users of technology have to navigate to do their jobs by designing our systems with emphasis on user productivity, and ensuring that our processes are intuitive and efficient for customers and employees.
- Efficiency – Provide economies of scale by:
  - leveraging AEP's spend on hardware, software and technical support services;
  - providing common processes for managing secure, reliable technology; and
  - optimizing the efficiency and performance of AEP's business and operational processes through strategic use of information technology.

Incentive goals are established annually for the corporation and for the Information Technology department. Specific areas within the IT department may establish focused goals as well. The goals vary from year-to-year and are designed to emphasize targeted improvements. Individual incentive plans will comprise some combination of corporate, department, and area goals.

Enterprise policy is established by the vice president and CIO. Formal policies exist in a variety of areas but are centered on the need to manage information risk and ensuring the security of the infrastructure. The policies and the practices in place to ensure enterprise cyber-security and adherence to all requirements from NERC and regional reliability entities are addressed later in this document.

II. Strategic and Long-Range Planning

IT conducts its planning on several levels. The starting point of the planning process is the company's long-range goals and objectives as articulated by senior corporate management. Specific inputs from the leaders of AEP's generation, transmission and distribution businesses help IT identify its strategic and long-range goals that will actualize the company's objectives.

These goals then are translated into plans that seek to fulfill the varying business needs of each jurisdiction by delivering solutions using common platforms, systems, and technologies which minimize the costs for the ratepayers.

New application projects are identified from this planning process and follow the corporate investment approval process to obtain funding. More details are provided in Section IV.

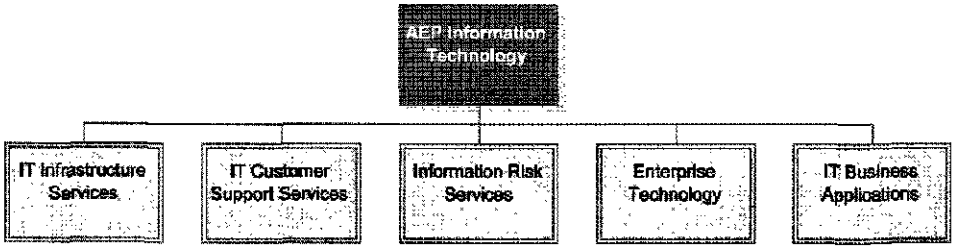
Financial planning is conducted on an annual basis as directed by the Corporate Planning & Budgeting Department. A department budget is developed by compiling input from all levels of IT management. Included in this budget are committed infrastructure costs plus an analysis of the application and infrastructure support needed to support all areas of the business for the upcoming fiscal year. This includes capital projects as well as ongoing support.

Technology planning is an ongoing effort. Research is driven by emerging technologies as applied to business needs. Technology-specific strategies and architectures are evaluated based on value to the business and risk, and new directions are approved by the CIO prior to implementation.

III. Organization Structure

The IT organization at AEP is a centralized shared service headed by the vice president and CIO, who reports to the senior vice president - Shared Services. IT services are provided through this organization for all AEP organizations with a very few exceptions for specialized areas (i.e., Nuclear).

The IT Department is divided functionally into five different areas, each headed by a director, depicted in the chart below:



The purpose of this organization structure is to streamline access to the IT organization, reduce complexity in providing solutions, and increase the flexibility and agility of IT to respond to AEP's business needs. IT uses common centralized resources to deliver common needs resulting in delivery with the lowest cost and greatest efficiency. Included in this structure are strategic partnerships with operating companies' management to ensure that local needs are met.

The IT Infrastructure Services group combines both infrastructure engineering and operations to provide and support reliable, secure and cost effective infrastructure solutions to enable the delivery of business services. Included is engineering and support of all telecommunications and computing platform environments.

IT Customer Support Services is responsible for the ongoing and continuous monitoring of telecommunications and computing platforms for all of AEP, and for resolving computing problems quickly and efficiently. IT Field Operations personnel are co-located in the operating companies to provide local resources delivering local needs. Included in this area is the implementation of IT's Service Management initiative to streamline operational processes.

Information Risk Services provides pro-active security analysis, responds swiftly to security events, develops efficient and sustainable cyber security architecture, guides the corporation in business continuity plans, and fosters an ingrained security awareness and compliance culture within AEP. Security policies and standards are developed and implemented to conform to all national and local requirements such as Sarbanes-Oxley, Personal Identifying Information and NERC Critical Infrastructure Protection (CIP).

IT's Enterprise Technology group is responsible for developing strategies leading to a simpler and more efficient and sustainable organization by providing technical standards and enterprise application services and technology investment plans. This also is IT's business office, including vendor, performance and cultural change (i.e., training) management.

The IT Business Applications area provides planning, development and support of the computer systems that support the generation, transmission, distribution and corporate functions of the enterprise. Also included is a program management office to help administer the systems development life cycle and project portfolio functions. The mission of this group is to provide highly reliable, flexible, low-cost and agile solutions using common architectures, delivered on-time and within budget. After delivery, this group is responsible for ongoing application support, responding rapidly and resolving incidents, delivering outstanding system performance, business continuity and quality control.

IV. Decision-Making

The Enterprise Governance Board provides governance of IT at an AEP Systemwide level to provide project and program prioritization and resource allocation linked to corporate strategy while allowing for local business flexibility. Included on this board are representatives for all the operating companies, including AEP Ohio. This board is responsible for approving the AEP Systemwide IT strategic direction.

The local utility IT operating committee, which includes members of AEP Ohio, approves information technology projects and overall spending levels within the corporate budgeting process and monitors that spending along with project schedules and benefit realization.

The capital improvement requisition process is another governance procedure used to approve, monitor and control spending on large development efforts. A formal requisition must be made to gain approval to charge capital work or to create a lease commitment, providing all important facts and considerations outlining the need to make the proposed expenditure. Revised authorization is required if the cost or scope of the project varies from the original authorization. Approval authority is granted to various levels of management depending on the level of expenditure.

V. Ring Fencing

The principles of ring fencing in utility regulation were codified in various provisions of the Public Utility Holding Company Act of 1935, (PUHCA). American Electric Power Company, Inc., (AEP), was a registered public utility holding company under the PUHCA until that act was repealed in 2005. The separation of regulated utility functions from non-regulated businesses required by PUHCA and prevailing throughout the AEP system has not been altered or diluted as it relates to AEP Ohio since the repeal of PUHCA. As a result, AEP Ohio, as constituent public utilities within the AEP system, continues to benefit from the ring fencing protections set forth in the PUHCA. In practical terms, this means that AEP Ohio:

1. has not made any investment in any entity engaged in a non-regulated business;
2. has not made loans or extended credit to AEP or to any affiliate engaged in a non-regulated business; and
3. has not guaranteed the indebtedness or the obligations of AEP or any affiliate engaged in a non-regulated business.

AEP Ohio consists of two separate legal entities, Ohio Power Company and Columbus Southern Power Company. Each AEP Ohio utility is a registered issuer under federal securities acts; each has independent access to public capital markets through which each continually raises capital. Each AEP Ohio utility is independently rated by the nationally recognized statistical credit rating agencies. Each AEP Ohio utility is managed by a board of directors that is responsible for authorizing action, including the acquisition or disposition of material assets, issuances of securities, and declaration of dividends, in such a way as to preserve the credit ratings and creditworthiness of each entity.

On June 2, 2010, the Commission approved AEP Ohio's corporate separation plans, filed June 1, 2009, and specifically found that the corporate separation plans were adequately implemented by AEP Ohio in accordance with Section 4928.17, Revised Code, Chapter 4901:1-37, O.A.C., and the orders of the Commission. (Opinion and Order in Case No. 09-464-EL-UNC). With its corporate separation plans, AEP Ohio has in place structural safeguards to ensure the independent functioning of the companies and their affiliates in a manner which is consistent with the Commission's Code of Conduct and which rejects cross-subsidization. The companies' accounting protocols, approach to financial arrangements, adherence to the Cost Allocation Manual requirements, employee education and training and internal compliance monitoring each support the goals and policies set out in Section 4928.02, Revised Code.

VI. Controlling Processes

The budget and improvement requisition processes control spending by the IT department on an annual basis. Within those spending and monitoring guidelines, controls governing the work of IT have been established within individual work areas.

IT business applications controls the application process through the use of AEP's published IT System Development Life Cycle, which covers all sizes and types of business systems from idea through

development, support, event response and retirement. Various gates and metrics are defined to ensure the delivery of projects on-time and within budget that meet the business requirements and functional needs. This is accomplished through use of common, scaled, repeatable tools and processes, defined roles and responsibilities, established milestones and handoffs, and scaled checkpoints for project and product quality.

All changes to the IT production environment, whether from requested application changes or incidents are controlled through the common IT service management processes that dictate common and controlled asset, configuration, and problem and change management.

The Infrastructure Services group has established reliability and availability metrics that allow management to evaluate the effectiveness of the infrastructure in meeting the telecommunications and information needs of the corporation. These metrics are developed and reported on a monthly basis.

The Service Management group within IT Customer Support Services is responsible for monitoring the status of the integrated telecommunications and information networks and computing platforms. Incidents are documented, and times to respond and remediate are tracked to ensure adherence to service levels.

Information Risk Services has defined controls and goals for the ongoing security of the networks and platforms carrying AEP's sensitive information. All interactions within and outside AEP are monitored 24x7 and are filtered to ensure compliance with all security policies and limit exposure.

VII. Internal and External Communications

A variety of communications media are used to effect internal communications. All levels of management within the department conduct regular staff meetings from the work group level on up. These in-person meetings serve as the primary means to collect and disseminate information.

Lotus Notes is AEP's primary e-mail system, which is the vehicle used to issue departmentwide memos and notices. IT uses a variety of technologies to publish articles of departmental or corporate interest. These include Lotus Notes, Sharepoint and internal web portals. Items posted on these sites include presentations, standards, reports, forms and policies. IT has an IT home page for employees, which serves as a reference point for departmental information.

IT uses webcasting technology for all-employee meetings, due to the large number and geographic diversity of the work force. This allows all employees to hear the same message at the same time while minimizing cost and maintaining coverage.

Communications between IT and other AEP departments may be informal via telephone or more formal via face-to-face meetings, e-mails and memos. IT also may direct other AEP personnel to on-line media such as Lotus Notes, Sharepoint or internal websites for information. AEP also maintains facilities for conference calls and video conferencing to allow for virtual meetings.

IT employees participate in all employee corporate communications via e-mail, intranet postings, physical mail and webcasts.

External communications are primarily with suppliers and vendors of IT and telecommunications products and services. IT may issue requests for information/quotes/proposals to partner with outside entities in the delivery of its services. Communications with these vendors may be by phone, physical or electronic mail or meetings, as necessitated by the work involved.

IT also participates in a variety of organizations such as user groups of various technologies, cooperative groups (i.e., UNITE for IT benchmarking and best practices) and local IT councils, etc. Many of these meetings are virtual, via conference call or video conferencing to minimize travel costs and time.

Individual personnel also may participate in a variety of local community programs, many sponsored by AEP such as Operation Feed, United Way, local Chambers of Commerce activities and educational programs, etc. AEP encourages employees to be good community citizens and provides many opportunities for involvement.

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Subsidiaries Columbus Southern Power Company and Ohio Power Company, DBA as AEP Ohio
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Information Technology

SFR Reference
(B)(9)(f)(i) Description of Major Systems and Platforms

Major Systems and Platforms

The major systems and platforms align to the aforementioned Information Technology section in relation to policy and goal setting, strategic and long-range planning, organization structure, decision-making, ring fencing, controlling process, and internal and external communication – Sections I-VII respectively.

The major systems and platforms that are used by all affiliates, including AEP Ohio are identified in the table below, including the total capital project costs.

Solution Drivers	Associated System(s)/Platform(s)	Total Project Cost
Compliance with FERC order to act as a participant in PJM market and improved communications between Ohio and PJM.	PJM Projects	$2,925,954
Improved customer service and experience through enhancements to application performance and usability in AEP's work management and inventory systems.	Distribution Work Management System	$280,869
	ENMAC/Distribution Automation (DA)	$2,309,755
	Meter Data Management System	$16,626,736
	Energy Cost and Reporting	$6,565,053
	Asset Suite (Indus)	$27,421,183
	Business Objects	$4,899,509
	Marketing, Accounting, and Customer Services System	$21,425,578
	Consolidated Energy Accounting System	$6,573,500
Enablement of AEP to build integrated end-to-end business processes across the organization. These new capabilities allowed loosely coupled integration points, simplifying any future upgrades and implementations, and allowing greater flexibility when combining/ consolidating systems for mergers and acquisitions.	PeopleSoft Finance and Human Resources Management System	$32,698,935
Implementation of a document management system to accelerate a paper-based business process to meet regulatory compliance requirements and cost-effective project management.	Generation Document Management	$3,328,360
Incorporation of additional or improved telecommunication sites.	Telecom Projects	$2,968,462

American Electric Power
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Information Technology

SFR Reference
(B)(9)(f)(iii) Policies for Protecting Company and Customer Information/Data

I. Policy and Goal Setting

Within American Electric Power's corporate Information Technology (IT) Department, the Information Risk Services team is responsible for enterprise functional responsibilities for cyber security and risk management, including program governance, cyber security operations and monitoring, cyber security engineering, compliance, business continuity, and access management. This includes maintaining the enterprise AEP Information Security Policy, herein referred to as "the policy," which describes at a high level the security requirements and responsibilities for users of AEP's information resources and assets. These governing rules are developed to ensure and maintain confidentiality, integrity and availability of AEP information, be it AEP internal company data or customer information.

- Confidentiality – Requires that information is accessible only to authorized users as determined by operational or business need.
- Integrity – The principle that data, systems, and processes retain their authenticity and are only intentionally modified by authorized users or processes.
- Availability – Requires that authorized users have appropriate access to information and systems in the performance of their responsibilities.

The policy is available to AEP employees and contractors for their use as required, but due to the highly confidential and sensitive nature of some of the cyber security controls outlined in the policy, that document is labeled AEP Confidential and has not been included as part of this submittal but will be available for inspection at the company's offices.

The policy further supports a suite of lower tier enterprise information security standards that address in more detail the specific cyber security requirements and measures of those focused individual standards. Amongst those individual standards is the "Personally Identifiable Information Standard," which addresses in detail the proper controls that must be established for the access, storage, transmission, and use of Personally Identifiable Information (PII). This document is also labeled AEP Confidential due to the highly confidential and sensitive nature of some of the cyber security controls outlined in this standard.

The policy document follows the framework of the International Standards Organization / International Engineering Committee ("ISO/IEC") standard 27002 "Information technology – Security techniques – Code of practice for information security management."

Maintenance of the policy is part of a continuous process improvement, with a minimum of annual updates to the policy.

The policy is also the company's key document for compliance with NERC's Critical Infrastructure Protection (CIP) standards. It is the company's NERC CIP "Cyber Security Policy" and covers the NERC CIP requirement to document and implement a cyber security policy that represents management's commitment and ability to secure it's NERC CIP Critical Cyber Assets. As such, the policy is signed by the company's NERC CIP "senior manager" with overall responsibility and authority for leading and

managing the company's implementation of, and adherence to, NERC Standards CIP-002 through CIP-009. These standards, include amongst other controls an information protection program to identify, classify, and protect information associated with Critical Cyber Assets. Implementation of that information protection program resulted in the policy being labeled "AEP Confidential" which does not permit documents under that classification to be released outside of the company.

In addition to the NERC CIP components of the policy, the following outlines the key components of the policy:

- Roles and Responsibilities – The policy addresses the roles and responsibilities of key functions related to information such as data owners, data custodians, authorized users, Information Risk Services, auditors, and the Senior Management for NERC CIP. This ensures all individuals are aware of and understand their roles and responsibilities for accessing AEP's systems.
- Organizational security – The policy addresses the IT groups responsible for maintaining the policy, approving the policy, and ensuring that access to the company's information systems by internal and external third parties, vendors or contractors shall comply with the provisions in this document,
- Personally Identifiable Information – The policy ensures that the company shall identify and protect privacy of Personally Identifiable Information (hereafter referred to as "PII") collected from customers and/or employees.
- Asset management – The policy ensures that all data owners should identify all assets in accordance with existing processes for Business Continuity and Disaster Recovery. The asset inventory should include all information necessary in order to recover from a disaster, including type of asset, format, location, backup information, license information, and business value. In addition, all information should be properly classified in accordance with the company's classification standards.
- Risk Assessment – The policy ensures that a formal risk assessments shall be conducted as appropriate for any information asset that falls under the Confidentiality, Integrity and Availability requirements. The risk assessment shall identify the most likely threats, the likelihood that these threats will materialize, and the risk associated with systems and data should those threats occur. Results of risk assessments will determine the appropriate risk management activities characterized and prioritized by risk acceptance, transfer or mitigation.
- Personnel security – The policy ensures that the company's employees will have a personnel risk assessment performed prior to starting employment. All company employees, contractors, and third party users (hereafter referred to as "workers") will understand their roles and responsibilities to reduce the risk of theft, fraud, or misuse of systems and equipment.
- Physical security – The policy ensures that all areas where data centers, telephone and data switch rooms, and network closets are located shall be designated as "secure areas" and protected by a defined security perimeter. Physical access to these areas shall be limited to persons identified on an approved access control list, based on job requirement and as determined by the applicable business unit. All equipment shall be protected from physical and environmental threats to prevent loss, damage, theft or compromise of assets and interruption of the company's operations.
- Disposal and recycling – The policy ensures that computer information storage devices must be sanitized prior to being reassigned or donated.
- Communications and operations management – The policy ensures that the company's systems shall be managed by qualified systems administrators responsible for overseeing the operations and security of the company's data and telecommunications systems. These individuals will be fully trained in their responsibilities. The policy further addresses good utility practice related to operations management of it's information systems including but not limited to the access controls required of it's users; malicious software prevention program(s); continuous (24x7) monitoring and logging of computer security related events and other related matters.

- Information systems acquisition, development and maintenance – The policy ensures all software acquisition, development, and maintenance must follow a formal life cycle development methodology. Specifications for the methodology shall include security requirements and implementations needed to protect the company's information resources. Management shall ensure that all development and maintenance activities comply with the company's policy and procedures for the protection of the company's information and information assets.
- Incident management – The policy ensures that there are procedures in place for the proper reporting and incident management of security incidents against the company's information systems; including roles and responsibilities during a security incident and proper reporting procedures and management escalation procedures.
- Business continuity and contingency management – The policy ensures that comprehensive business continuity and disaster recovery plans are developed and those plans shall detail how the company's critical applications will be executed should any incident result in the loss of normal facilities, information resources, or personnel.
- Security compliance – The policy ensures all employees and contractors shall be in compliance with the information security polices established by the company as well as any legal, statutory, regulatory, or contractual obligations.

From a gridSMART™ policy perspective, AEP is realizing an increased merging between information systems, control systems and the use of digital information in the implementation of new technology for AEP's gridSMART™ Smart Grid initiative. This includes modifications and mitigation strategies to legacy systems. Within this effort to deploy Smart Grid technologies, it is the mission of the Information Risk Services team to provide:

1. secure and reliable information sharing;
2. effective security risk management;
3. privacy protection;
4. coordinated response capabilities;
5. trusted relationships throughout AEP; and
6. trusted relationships with industry working groups, government, and regulators.

The overall cyber security goals for AEP's gridSMART™ initiative are to advance AEP's cyber security capabilities for the Smart Grid by:

1. establishing and maintaining the capability for timely detection and response of the Smart Grid environment through the implementation of a dedicated Cyber Security Operations Center to identify, monitor, and remediate security threats;
2. mitigating any consequences (impacts) of cyber events;
3. correcting vulnerabilities that may be exploited;
4. restoring systems, networks, and equipment impacted by cyber events;
5. implementing a test facility to perform security assurance;
6. implementing emerging and published industry security standards across the network and all interfaces; and
7. applying a new, structured approach to the design and implementation testing of system cyber security.

A list of other AEP IT policies and standards is provided in the table in Exhibit IT-1.

II. Strategic and Long-Range Planning

AEP has an information security framework that outlines the interrelated strategic, tactical and operational components for creating and maintaining a solid enterprise information security program at AEP. Each of

these components is a collection of processes and practices that work together to address enterprise security.

As new information security risks and/or threats are identified, the Information Risk Services team will perform new risk and vulnerability evaluations, and then determine the proper mitigation plan or process to be deployed to address that new vulnerability. Depending on the vulnerability profile, that mitigation deployment could be short or long term. In addition, as new industry functions and services are required or developed, the information security program is modified as needed to address the new requirements or vulnerabilities.

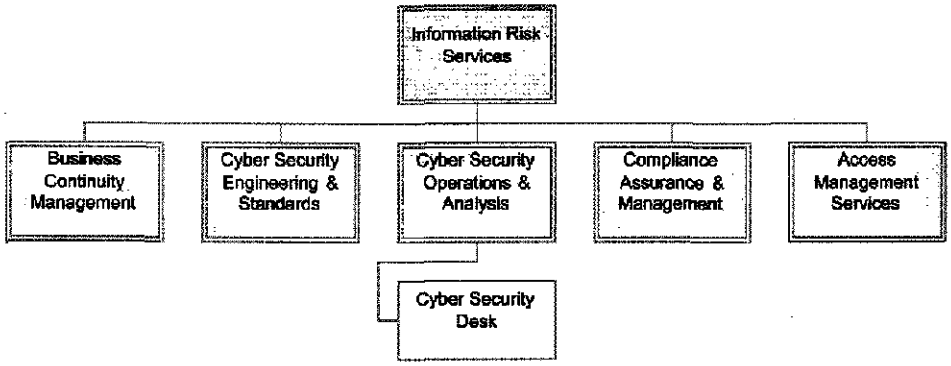
The United States government passed the Energy Independence and Security Act in 2007 (EISA 2007). Under EISA 2007, the National Institute of Standards and Technology (NIST) has "primary responsibility to coordinate development of a framework that includes protocols and model standards for information management to achieve interoperability of Smart Grid devices and systems..." and in this vein, AEP is a strong participant in the NIST Smart Grid Interoperability Panel (SGIP) and the Cyber Security Working Group (CSWG).

The CSWG is identifying strategy and standards that are relevant to Smart Grid cyber security. Updates of these strategies and standards are occurring on an ongoing basis, and AEP will manage its Smart Grid deployments as appropriate. Additionally, as new threats appear that threaten the overall Smart Grid landscape, the security risk management approach will be used to ascertain whether or not AEP's gridSMART[SM] initiative is at risk. The same is true as new security standards appear, whether to address specific threats that affect technologies in use or if these new security standards are actually updated standards to address a specific weakness in the superseded standard. The Smart Grid technologies AEP is introducing programmatically will introduce new intelligent components to the electric grid that bi-directionally communicate through the use of open standards-based technology. Maintaining these communications is critical to the success of the Smart Grid, with cyber security and privacy being key elements in design, implementation and deployment. The successful implementation of robust cyber security and privacy practices will enable:

- safety and reliability of the electric grid;
- anticipation of and response to system disturbances; and
- operation resiliency to accidents, attacks, and natural disasters.

III. Organization Structure

The Information Risk Services team has been structured to focus all enterprise cyber security functions into a single team reporting directly to the AEP's Chief Information Officer. The structure of this team is as follows:



- Business Continuity Management – Focused on enterprise coordination of disaster recovery / business continuity planning, and lead group within IT for it's BCP/DR functions.

- Cyber Security Engineering and Standards – Focused on long term sustainability of cyber security via enterprise cyber security standards, security architecture, and cyber security training and awareness.
- Cyber Security Operations and Analysis – Focused on real-time and near term enterprise cyber security risks, events, and cyber incident management.
- Cyber Security Desk – Focused on the 24 x 7 functions of enterprise cyber security real-time monitoring and response to threats and attacks.
- Compliance Assurance and Management – Focused on cyber security compliance activities for IT, including regulatory cyber security compliance.
- Access Management Services – Focused on enterprise user access rights functions and IT configuration management functions.

The organizational structure for the gridSMART™ Cyber Security Team has been developed to account for all activities under the gridSMART™ umbrella across AEP's operating territories. This includes all activities for both the Cyber Security Engineering and Standards team and the Cyber Security Operations & Analysis team. The Cyber Security Engineering and Standards team has overall responsibility to ensure that projects are delivered and are production ready, accounting for the majority of the work effort.

IV. Decision-Making

The director of IT Information Risk Services is responsible for the functions of the Information Risk Services team and for the overall enterprise cyber security functions, reporting directly to the chief information officer.

The Information Risk Services team is responsible for maintaining a governance program around enterprise cyber security and the policy. In addition, this team also is responsible for AEP's Cyber Incident Response Program where cyber incidents are managed with proper response procedures, escalated to the CIO and other AEP senior management as required, and reported to regulatory authorities as outlined in the response program.

The Information Risk Services team is staffed with cyber security subject matter experts (SMEs), who are relied upon to make judgment calls about the effectiveness and efficiency of cyber security services, mechanisms and processes needed to protect the enterprise. Roles and responsibilities for the SMEs include, but are not limited to, the following:

- provide Information Assurance processes for technical and managerial issues on cyber security;
- understand threats, vulnerabilities, and impacts directly impacting the end-to-end enterprise environments;
- define and establish a balanced set of system security requirements based upon security risk assessment of the identified risks;
- transform security requirements into holistic security guidance to be integrated with program and project deliverables;
- define the enterprise cyber security architecture in accordance with identified risks.
- develop detailed cyber security designs for all systems and components;
- establish confidence and assurance into the appropriateness and efficacy of security mechanisms;
- ensure operational impacts created as a result of residual security vulnerabilities are tolerable within systems and the overall enterprise environment; and
- participate in the procurement of systems and components.

V. Ring Fencing

The principles of ring fencing in utility regulation were codified in various provisions of the Public Utility Holding Company Act of 1935, (PUHCA). American Electric Power Company, Inc., (AEP), was a registered public utility holding company under the PUHCA until that act was repealed in 2005. The separation of regulated utility functions from non-regulated businesses required by PUHCA and prevailing throughout the AEP system has not been altered or diluted as it relates to AEP Ohio since the repeal of PUHCA. As a result, AEP Ohio, as constituent public utilities within the AEP system, continues to benefit from the ring fencing protections set forth in the PUHCA. In practical terms, this means that AEP Ohio:

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3. has not guaranteed the indebtedness or the obligations of AEP or any affiliate engaged in a non-regulated business.

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On June 2, 2010, the Commission approved AEP Ohio's corporate separation plans, filed June 1, 2009, and specifically found that the corporate separation plans were adequately implemented by AEP Ohio in accordance with Section 4928.17, Revised Code, Chapter 4901:1-37, O.A.C., and the orders of the Commission. (Opinion and Order in Case No. 09-464-EL-UNC). With its corporate separation plans, AEP Ohio has in place structural safeguards to ensure the independent functioning of the companies and their affiliates in a manner which is consistent with the Commission's Code of Conduct and which rejects cross-subsidization. The companies' accounting protocols, approach to financial arrangements, adherence to the Cost Allocation Manual requirements, employee education and training and internal compliance monitoring each support the goals and policies set out in Section 4928.02, Revised Code.

VI. Controlling Process

Cyber security engineering is a systems engineering methodology for discovering users' security needs and the overall security needs of AEP. As a systems engineering methodology, the focus is on development of detailed engineering plans and designs for security services, components, and mechanisms for information and control systems needing to ensure application of appropriate quality attributes, namely in the area of security. From a high-level perspective, these quality attributes are:

- availability;
- integrity;
- confidentiality;
- authentication;
- non-repudiation;
- asset protection;
- infrastructure control;
- safety; and
- reliability.

The application of the above attributes are based upon valid risk management decisions that, along with considerations for economy, sophistication and diligence, provide for mechanisms ensuring that systems can safely resist the forces to which they may be subjected.

As a discipline, cyber security engineering's primary motivation is to support engineering solutions that satisfy both the functional and non-functional (quality) requirements of the system being designed. An

additional dimension is to prevent misuse and/or malicious behavior along with mischance events. The focus is on processes, methods, and tools needed to deliver complete systems or to adapt existing systems as their environment evolves by incorporating protection, detection, and reaction capabilities.

VII. Internal and External Communications

Communication of the enterprise AEP Information Security Policy to all employees and contractors is critical to the success of an enterprise approach to cyber security.

Security awareness is another key aspect of the cyber security communication plan. Each year, all employees and contractors have access to an online training course via AEP's knowledge learning system called KEY. This course is refreshed at the end of each year and then republished at the beginning of the subsequent year.

For those employees and contractors that access critical cyber assets covered by the NERC Critical Infrastructure Protection (NERC CIP) program, they are required to take additional training on the proper use of critical cyber assets prior to being granted access to those assets.

Both of these training programs are focused on communication of cyber security responsibilities.

Externally, the AEP Cyber Security team is participating in the development of various cyber security standards, guidelines, security profiles and specifications directly impacting both the Smart Grid and the bulk electrical system. This includes government and industry efforts that are aimed at strengthening overall security of the electric grid, notably the NERC CIP standards and NIST development work on Smart Grid cyber security. As changes occur in the Smart Grid, or as maturity continues to move forward, the Information Risk Services team will use the security risk management process to identify potential changes, analyze changes, and evaluate, plan, implement, review and close these issues. The team continues to consult and collaborate with other utilities, government agencies, and research and development (R&D) to determine the next best course(s) of action to take in cyber security.

Exhibit IT-1 – Table: IT Policies and Standards

Included in the table below are the Information Technology policies and standards that govern American Electric Power.

Information Technology Policies and Standards	
AEP Information Security Policy	
Access Controls Standard	Network Connected Computers Security Standard
Antivirus Software Standard	Network Device Time Synchronization Standard
Asset Management Policy & Standard	Oracle Auditing Standard
Breach of Security	Oracle Operational Security Standards
Building Emergency Policy	Personal Firewall Standard
Building Emergency Standard	Personally Identifiable Information Standard
Business Continuity Standard	Port Facility Security Standard
Computing Device Recycling/Disposal Standard	Remote Access Network Connections Standard
Corporate Information Security Policy	Secure Visitor Management (SVM) Standard
Cryptographic Controls Standard	Security Awareness Standard
Data Backup, Retention and Recovery Standard	Security Compliance and Audit Control Standard

Information Technology Policies and Standards	
Electronic Commerce Standard	Security Monitoring and Logging Standard
Electronic Mail Standard	Shelter In Place Plans Standard
Enterprise Database Security Standard	Software Acquisition and Disposition Compliance Policy and Standard
Enterprise Firewall Standard	Software and System Maintenance Standard
Exemptions to Security Policies and Standards	Software Compliance Policy
Field Data Communications Security Standard	Software License Compliance Policy & Standard
Hand Held Computing Device Standard	System Development Life Cycle (SDLC) Process
Incident Reporting Standard	Unix Security Standard
Incident Response Program Standard	User ID & Password Standard
Information Classification Standard	VMS Application FTP Standard V1.51
Ingress and Egress Data Standard	Voice Mail Standard
Instant Messaging Standard	Vulnerability Management Standard
Internet Use Standard	Warning Banners Standard V1.51
IT On-Line User Registration (OUR) Policy and Procedure Version 1.0	Web Access Control Standard
Limited Root Account Access	Windows Environment Access Standard - External Domains
Mobile Data Computer Standard	Windows Environment Access Standard - Internal Domains
MS .NET Framework Standard	Wireless Security Standard

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Supply Chain & Fleet Operations

SFR Reference

(B)(9)(b)(v)	Materials and Inventory Management and Control
(B)(9)(g)(i)	Fleet Management
(B)(9)(g)(ii)	Garages/Fleet Management

Information regarding fleet operations (except aviation) and supply chain is covered by in Section (B)(9)(b)(v) finance and accounting.

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Transportation

SFR Reference
(B)(9)(g)(i) Fleet Management – Aviation

I. Policy and Goal Setting

Aviation Services policies are based on the corporate mission, vision and values objectives along with industry best practices and regulatory requirements. Aviation Services is responsible for providing safe, effective, and efficient corporate aviation travel for American Electric Power executives and employees. Aviation Services must comply with regulatory requirements established by the Federal Aviation Administration (FAA) and the International Civil Aviation Organization.

Team and individual goals are developed each year that reflect department objectives based on corporate goals. There is a semi-annual review and at the end of each year, achievements are evaluated and incentives are awarded proportionate to the level of overall achievement.

II. Strategic and Long-Range Planning

The executive management of the company has the primary responsibility for establishing the company's strategic plan. Company departments have planning sessions to develop departmental strategic plans that support of the company's strategic plan. Additionally, several leadership team meetings occur throughout the year to assess adherence to the established plan and develop long-range goals and objectives.

III. Organization Structure

Aviation Services is part of the Shared Services organization that includes Security, Aviation and Procurement; Supply Chain and Fleet; Human Resources and Information Technology. The Shared Services senior vice president reports to the president of AEP Utilities. The president of AEP Utilities reports to the chief operating officer, who reports to the chief executive officer and chairman of the board. Aviation Services organization chart is provided in Exhibit 1.

IV. Decision-Making

Aviation Services uses a risk-based decision-making process that is outlined in the Flight Operations Manual. Threats and vulnerabilities are evaluated, and when identified, mitigating processes are put in place that support growing shareholder value by providing safe, efficient and cost-effective travel for the employees of American Electric Power. The key drivers used in this process are: safety, compliance and reliability along with financial responsibility and budget adherence.

All employees are expected to make decisions and exercise control over their areas of responsibility within the parameters of those boundaries, reporting results to their immediate management on a regular basis.

All financial/purchasing decisions are made in accordance with each individual's proper delegation of authority.

V. Ring Fencing

The principles of ring fencing in utility regulation were codified in various provisions of the Public Utility Holding Company Act of 1935, (PUHCA). American Electric Power Company, Inc., (AEP), was a registered public utility holding company under the PUHCA until that act was repealed in 2005. The separation of regulated utility functions from non-regulated businesses required by PUHCA and prevailing throughout the AEP system has not been altered or diluted as it relates to AEP Ohio since the repeal of PUHCA. As a result, AEP Ohio, as constituent public utilities within the AEP system, continues to benefit from the ring fencing protections set forth in the PUHCA. In practical terms, this means that AEP Ohio:

1. has not made any investment in any entity engaged in a non-regulated business;
2. has not made loans or extended credit to AEP or to any affiliate engaged in a non-regulated business; and
3. has not guaranteed the indebtedness or the obligations of AEP or any affiliate engaged in a non-regulated business.

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VI. Controlling Process

Flight operations are guided by the regulatory requirements of federal aviation regulations and the International Civil Aviation Organization in conjunction with the standards set forth by the International *Standards for* Business Aircraft Operations.

Periodic and scheduled audits are done of the department policies and practices to insure adherence to compliance requirements, as well as best practices of the corporate aviation industry standards.

Annual recurrent training is performed for flight department personnel to ensure competency and currency in the aircraft type to which they are assigned.

VII. Internal and External Communications

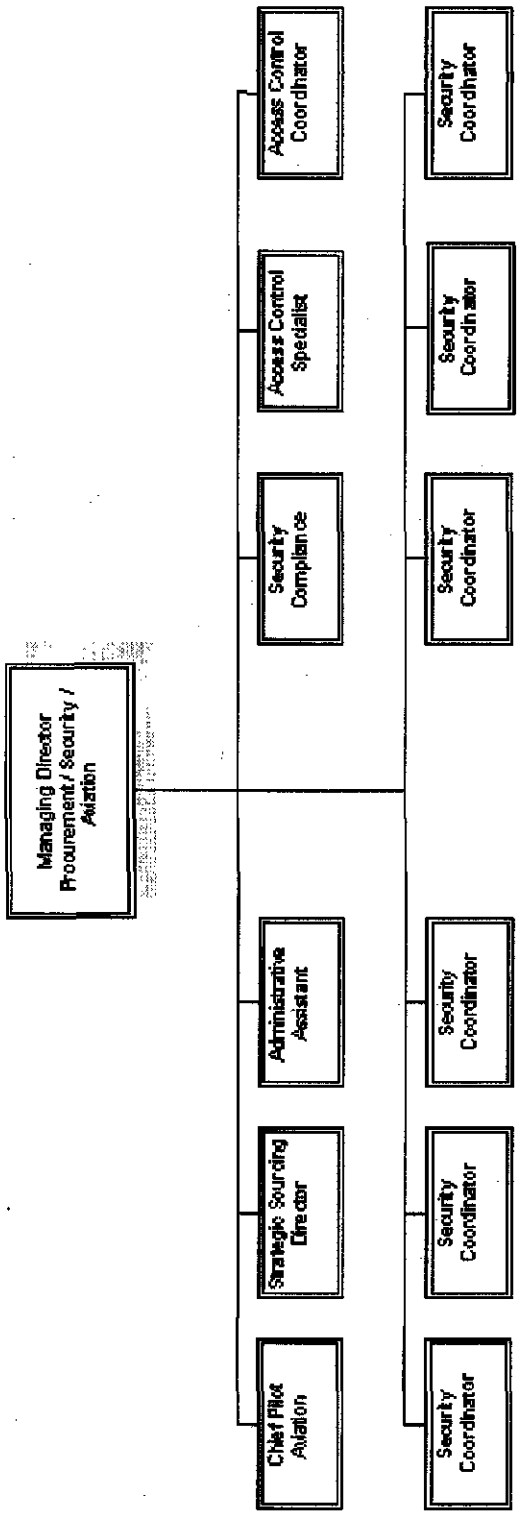
Internal and external communications are accomplished through personal and telephone discussions, e-mail, formal and informal meetings, memoranda and formal and informal correspondence. Facsimile

transmission equipment also is available.

In addition to intradepartmental and intracompany communication, Aviation Services personnel also communicate with the following external parties via various methods:

- Federal Aviation Administration;
- airport personnel in various cities, Fixed Base Operators (FBO's), etc.;
- Department of Transportation; and
- Hotels.

Exhibit 1 – Aviation Services Organization Chart



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Human Resources

SFR Reference

(B)(9)(h)(i)	Salary and Benefits Administration
(B)(9)(h (ii)	Recruiting and Selection
(B)(9)(h (iii)	Training and Career Development
(B)(9)(h (iv)	Performance Evaluation and Appraisal
(B)(9)(h (v)	Work Force Productivity

I. Policy and Goal Setting

The AEP System Human Resources Department provides leadership, guidance and assistance to system companies including AEPSC, and CSP and OP, doing business as AEP Ohio. Human Resources carries out its support through the development, implementation and administration of programs, policies and procedures that enable the companies to attract, motivate, develop and retain well qualified employees for the companies' present and future needs to carry out the multi-faceted work responsibilities required to provide our customers with power. These programs, policies and procedures comply with all applicable governmental and employment-related laws and regulations.

The vice president of Human Resources is head of the Human Resources Department and is responsible for recommending and implementing Human Resources polices for the AEP System.

Functions within Human Resources engage in policy and goal-setting as follows:

Benefits: Design and maintain quality benefit and work-life programs. Benefits are reviewed annually to assure that benefits are obtained at the best value for the company and employees and that programs remain competitive with both industry peers and overall industry.

Compensation: Maintain an equitable wage and salary administration program that provides fair wages and salaries competitive with those paid for similar positions within the industry (and for overall industry for positions where competition for talent is on a broad basis). The salary structure is reviewed on an annual basis and is based on market data and economic conditions. Wage rates for collective bargaining units are the subject of negotiations, with rates guided by market data and economic conditions.

Field Operations & Strategy – Provide localized strategic consultation and support in all areas of Human Resources, including employee counseling and conflict resolution, disciplinary actions, diversity activities, workforce planning, HR communications, outplacement and severance, compliance and reporting, staffing and recruiting, and partnering with business unit leadership to support business plans.

Labor Relations – Promote and improve the working relationship between the company and its employees who are represented by unions by honoring the spirit, as well as the terms and conditions, of the individual bargaining agreements.

Leader & Organization Development – Design, develop, deliver and administer programs to enhance leadership effectiveness, professional development and change management skills. Provide consultation and support in all areas of talent management, including workforce planning, staffing and selection, performance management and succession planning.

Operational Services – Operationalize and administer support for programs and processes that are the responsibility of HR through an HR Service Center, integrated disability center, payroll services and Human Resources information services.

Workforce Diversity – Develop, implement and monitor programs, procedures and practices in the areas of diversity and compliance to support a respectful, inclusive and bias-free workplace and to comply with workforce related local, state and federal laws and regulations.

II. Strategic and Long-Range Planning

Human Resources develops its long-range strategic plan in support of the overall business plans of the corporation and individual business units. The strategic plan is reviewed and updated annually.

Annual goals to support the long-range strategic plan are developed in partnership with and reviewed with the Executive Council and individual business units.

Functional leaders within Human Resources are responsible for developing long- and short-range goals that support and facilitate the overall objectives. Functional and individual goals are evaluated and reviewed annually.

III. Organization Structure

Human Resources, in partnership with business unit and operational leadership, provides services to:

1. give a broad base of Human Resources advice and knowledge to leaders and employees in every day situations;
2. achieve operational excellence in HR administration and compliance;
3. manage performance and develop people so that strong leader and employee talent is available at all levels of the organization;
4. encourage a high-performance culture through a focus on both people and results;
5. provide Human Resources management, support and training that result in leadership teams and ad hoc project teams that operate to their fullest potential; and
6. recruit, hire and retain employees to ensure AEP has a diverse and highly capable workforce.

The department supports the corporate policies and objectives as described in the AEP Employee Handbook and the AEP Management Information & Policy Manual.

Human Resources is part of the Shared Services organization, reporting to the Shared Services senior vice president. The Shared Services function reports to the president of AEP Utilities.

There are two primary ways Human Resources provides support:

- Human Resources employees geographically located with the business unit provide day-to-day support for a wide variety of local issues. These Human Resources employees are located within the business unit; and

- Human Resources employees located at a single geographic location focus on a particular area of expertise, such as compensation, benefits and the Human Resources Service Center.

By providing Human Resources services using this approach, the department combines the economies of corporate scale with the customization and focus associated with a decentralized model.

All Human Resources employees providing services to business units work for AEPSC, regardless of location. The department staffs in this manner because all Human Resources employees routinely provide services for more than one AEP affiliate.

Human Resources is divided into functions including: 1) compensation; 2) benefits; 3) field operations and strategy; 4) labor relations; 5) leader and organization development; 6) operational services; and 7) workforce diversity. Each area is lead by a functional leader who reports to the vice president of HR.

The Human Resources field operations and strategy group oversees HR support for AEP operating companies, including AEP Ohio.

Human Resources field operations are managed by the Human Resources region manager, who reports to the director of Human Resources field operations and strategy. The Human Resources region manager leads a staff who work as business partners to AEP Ohio.

Organization charts for the Human Resources Department and AEP Ohio Human Resources are attached as Exhibit HR-1.

Responsibilities

Human Resources is a strategic partner to all American Electric Power affiliates, including AEP Ohio. To ensure that HR fully supports affiliates in their mission to provide safe, reliable and efficient utility service, the Human Resources staff maintains a day-to-day working relationship with the management and employees of AEP Ohio. Responsibilities of various functions include:

Benefits: Design and deliver competitive benefits and work life programs to employees and retirees. Benefits include health and welfare benefits, retirement pension and 401 (k). Specific programs include designing and delivering a wellness program, disease management programs and health management programs to control health care costs.

Compensation: Ensure a competitive compensation system for all employees. The function's responsibilities include the preparation and analysis of market comparison studies of energy industry, overall industry and geographic current practices.

Field Operations & Strategy: Business partners and consultants within field HR support business units. They are responsible for consulting with management on a broad range of Human Resource issues and being a resource for employees. They facilitate the implementation of Human Resources policies and programs and serve as a liaison between the business units they support and the Human Resources Department.

Labor Relations: Plan, organize and manage the overall relationship between the company and its unions. Assist line management and field Human Resources in interpreting policies concerning coaching and counseling for non-union employees. Specific duties including collective bargaining negotiations, administering the grievance process, coordinating interpretation of labor-management agreements and representing the company's position in the grievance, arbitration conciliation and mediation process.

Leader & Organization Development: Consult with business units and senior management to develop leaders, teams and individuals. Specific duties include workforce planning, building a leadership bench,

staffing and selection processes, internal career development, boosting leadership development, coordination of the performance management system, succession planning, and shaping culture.

Operational Services: Provide day-to-day administration of Human Resources programs through four subgroups: 1) The Human Resources Service Center is a centralized administrative, transactional and employee call center service; 2) the integrated disability center manages the company's disability programs, which include sick leave, workers' compensation and long-term disability payments; 3) payroll provides services to pay AEP employees and assure accurate and compliant disbursement of taxes; and 4) Human Resources information services supports ongoing and new Human Resources on-line systems.

Workforce Diversity: Facilitate the support of a culture that is inclusive and values diversity. Assure compliance with all employment practices and programs such as Equal Employment Opportunity and Affirmative Action and compiles and submit information in response to related government and regulatory agency requirements and requests.

Practices and Procedures

Practices and procedures are organized by function. Examples by function:

Benefits

- Design, implement and maintain a comprehensive benefit program and work life program that is competitive with comparable utilities and overall industry in a cost effective manner.
- Communicate and educate employees so that they are knowledgeable about the benefits available to them.
- Manage and administer specialized programs, including Wellness, Employee Assistance Plan, Long-Term Care Plan, and Vision Care Plan.

Compensation

- Administer compensation programs including development and maintenance of wage and salary structures, position descriptions, and job analysis and evaluation. Design, develop and administer the compensation and executive compensation plans, including long-term and short-term incentives, non-qualified deferred compensation plans and SERP.
- Support a pay-for-performance compensation philosophy that links market based individual rewards to business performance.
- Develop and prepare materials for the HR Committee of the Board and the annual proxy statement.
- Consult with and assist business unit managers and Human Resources staff in regard to matters concerning compensation programs.
- Develop and implement effective communications necessary to establish and maintain a sound compensation program that contributes to the overall objectives of AEP.

Field Operations & Strategy

- Partner with AEP Ohio's leadership to implement and provide support for strategic business plans.
- Consult with management to determine workforce planning needs.

- Work with managers and all employees to review and make recommendations related to employee performance and other employee and labor relations issues.

- Conduct employee counseling sessions related to retirement, severance, or survivor/beneficiary counseling.

- Establish and implement initiatives that are designed to improve individual or team performance.

- Facilitate and coordinate filling positions through hiring external and internal candidates

Labor Relations

- Plan, support and supervise labor negotiations to ensure the negotiating committee has the necessary information to negotiate a fair and equitable agreement.

- Administer collective bargaining agreements and advise management on contract interpretation.

- Advise management on the grievance procedure and administering the grievance procedure. Provide labor relations training to supervisors.

- Provide counsel to management and employees on overall Human Resources workforce policies and corrective action procedures.

Leader and Organization Development

- Provide direct leadership and organization development support to operational business unit.

- Design and deliver leadership development tools, processes and resources to strengthen the effectiveness of current AEP leaders.

- Establish and implement initiatives to prepare future leaders through high potential identification, succession planning and targeted development.

- Facilitate workforce planning, workforce analyses and workforce management projects.

- Maintain and communicate system-wide employment, staffing and selection policies and processes.

Operational Services

- Provide administrative and general employee services to all employees and retirees, surviving dependents and deferred annuitants.

- Handle benefits enrollment and compensation transactions.

- Is the call center for employee and retiree questions and issue resolution and act as liaison with vendors and third party administrators.

- Administer all major benefits programs, including retirement plan benefits as well as work life programs such as educational assistance.

- Process new hires, terminations, transfers, status changes, promotions, position updates, leaves of absence, retroactive pay adjustments and processing of pay changes.

- Process life insurance and other related actions for deaths of active employees, dependents, retirees and survivors.

- Provide retirement plan estimates and actuals, verifications of employment, HR data/project management for acquisitions and divestitures and manage vendor services.

- Manage and coordinate disability programs, which include sick leave, workers' compensation and long-term disability payments as well as federal programs such as Black Lung, Jones Act, and Longshoremen and Harbor Workers.

- Process payroll for employees; determine tax liabilities and file appropriate returns, and make timely deposits; produce W-2s and W-2C's; administer garnishments, support orders, and other wage attachments; process deductions for voluntary deductions and benefits and payments to vendors and others; and determine and report imputed income for retiree life insurance

- Manage on-line HR systems such as the core HR system, time-reporting system, portal for employee and manager 24/7 access and self-service, annual online benefits enrollment, performance coaching, compensation management, applicant tracking and employee on-boarding, learning management, integration with other corporate functions and systems and interfaces to many entities.

Workforce Diversity

- Design, facilitate and support continuing diversity and inclusion education and awareness.

- Design and develop procedures to guide management in the implementation of Human Resources policies in areas such as affirmative action, work life, diversity, preventing and addressing harassment.

- Ensure an effective compliance program by identifying, monitoring and mitigating risks associated with employment law compliance, internal controls and overall effectiveness.

IV. Decision-Making

Daily operational decisions or functional matters are routinely made by functional leaders within Human Resources.

Goals and objectives that affect corporate policy or multiple business units are reviewed by functions within Human Resources and discussed with the vice president - Human Resources, and -- as appropriate -- senior corporate management up to and including the chief executive officer and business unit and functional leaders outside Human Resources.

V. Ring Fencing

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VII. Internal and External Communications

Human Resources relies on a wide variety of communications channels.

Human Resources staff geographically located within a business unit engage in frequent face-to-face and telephonic communications throughout the day. Likewise, centrally located Human Resources staff engages in frequent face-to-face and telephonic communications with employees and leaders throughout the organization on a regular basis.

Topics that apply to employees in the entire organization are communicated through various means of communication, including face-to-face small- and large-group meetings, conference calls, the online website, e-mail and by paper communication mailed to the home.

External communications includes communication with counterparts in other utilities, questionnaires, surveys and participating in professional association workshops and meetings.

VIII. Goal Attainment & Quantification

All merit eligible employees receive an annual performance appraisal review from their leader. The review includes both feedback and coaching in regard to specific operational goals set at the beginning of the year and on competencies related to how the job is performed, such as communication and teamwork. During the review meeting, performance is evaluated.

Here are examples of performance indicators that provide an indication of the quantity and quality of work being completed by various work units:

Benefits: Cost trends for benefit plans are comparable to industry benchmarks. Participation rates in various plans, e.g. Wellness. Employee feedback provided to plan vendors, Human Resources Service Center, and the field HR organization as well as input from internal business unit partners to gauge satisfaction and effectiveness of program offerings. Input from external benefit consultants regarding competitiveness of AEP's programs from both cost and design standpoints as compared to other large U.S. companies.

Compensation: Wages are competitive with utility companies as well as local, regional and national industry to ascertain relative positions in the compensation area.

Field Operations & Strategy: Qualitative input from functional leaders on the overall consulting capability of the HR staff in a wide variety of strategic and tactical areas. Quantitative performance indicators include number of job openings filled and the time needed to fill these openings in compliance with local, state and federal mandates, delivery of programs to support leadership and employees in areas related to Human Resources, and delivery of strategies and plans such as workforce plans.

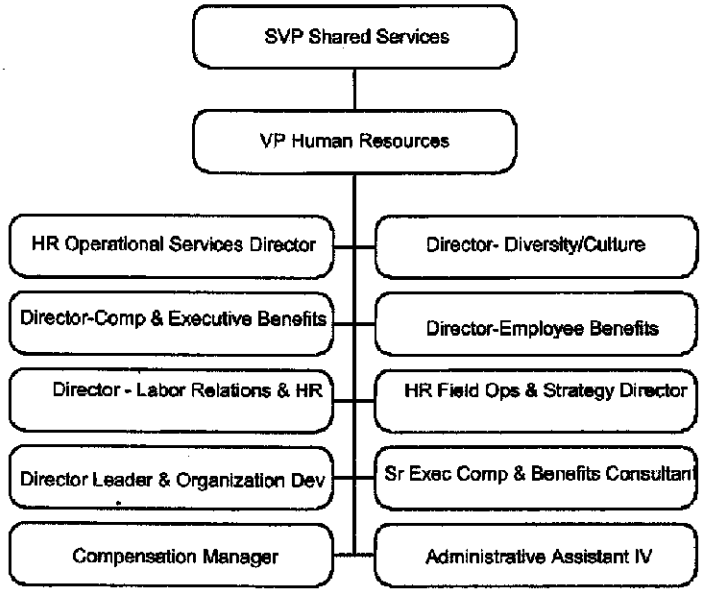
Labor Relations: Internal customer satisfaction survey data. Number of third-step grievances settled, favorable arbitration decisions, number of labor concerns elevated to company senior leadership, and qualitative information such as trends regarding topics at union/management meetings.

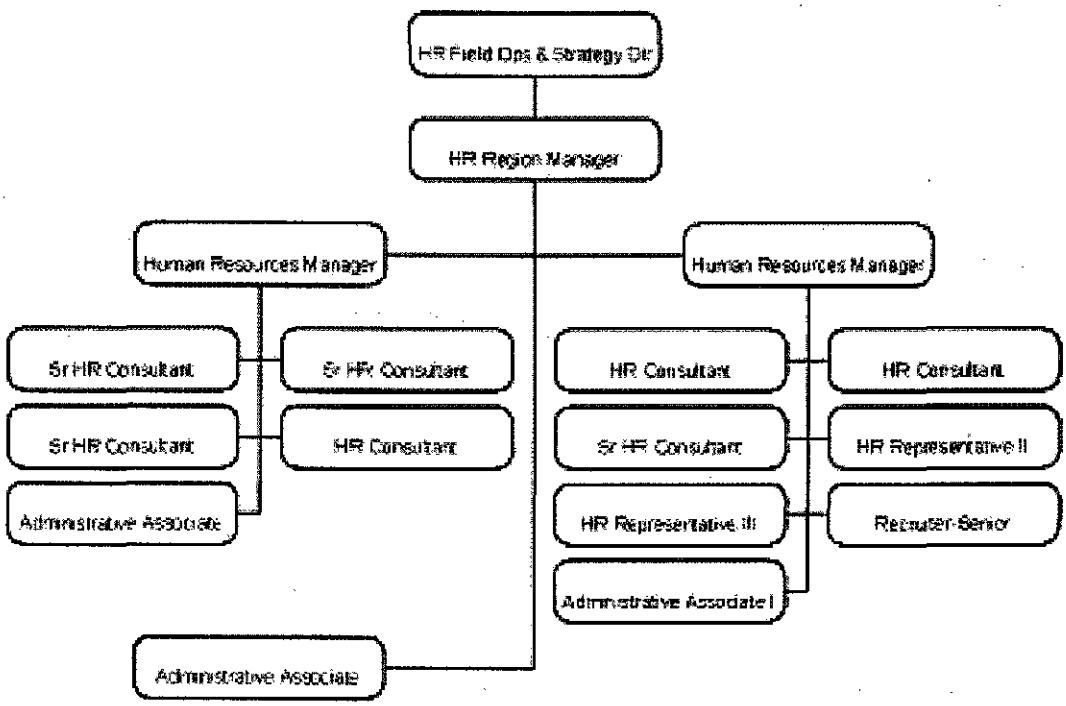
Leader & Organization Development: Learning effectiveness dashboards that measure the relevance and effect of leadership programs and measure other programs and tools based on input regarding relevance, timeliness and affect. AEP's pool of high potential leadership candidates who are retained, move to new roles or are promoted. AEP programs and strategies compared to best practices within and beyond our industry.

Operational Services: Customer satisfaction scores of better than 4 out of 5 rating. Employee actions, enrollments, personal information changes, and organizational changes processed accurately and timely – on or before their effective dates unless systems are unavailable. Customer cases responded to and resolved timely and within plan guidelines and company policies. Compliance with all regulations and policies and pass all audits with no material findings

Workforce Diversity: Diverse candidate placements for all available positions at a rate consistent with the qualified, interested and available applicant pool. Frequency of a diverse slate of candidates provided relative to each job posting being filled. Quality and value of diversity and inclusion learning programs are measured by either on-line or hard copy evaluations. Results of external audits such as affirmative action audits.

Exhibit HR-1 – Human Resources Organization Chart





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Energy Efficiency/ Peak Demand Response (EE/PDR) Department

SFR Reference	
(B)(9)(i)(i)	Conservation/Demand-Side Management/Integrated Resource Planning
(B)(9)(i)(iv)	Rate and Bill Impact Evaluation Process
(B)(9)(i)(vi)	Financing Requirements Demand-side Management/Integrated Resource Planning
(B)(9)(i)(vii)	Innovative Rate and Tariff Processes

Information regarding (B)(9)(i)(I) also is included in section (a) plant operations and construction.
Information regarding (B)(9)(i)(iv) is included in section (c) rates and tariffs.
Information regarding (B)(9)(i)(i and vi) is included in section (b) finance and accounting.
Information regarding (B)(9)(i)(vii) is included in section (c) rates and tariffs.

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Management Policies, Practices and Organization Schedule S-4.2
Conservation/Demand-Side Management/Integrated Resource Planning

Energy Efficiency/ Peak Demand Response (EE/PDR) Department

SFR Reference	
(B)(9)(d)(iii)	Customer Conservation Programs
(B)(9)(d)(iv)	Marketing
(B)(9)(i)(ii)	Conservation Program Policies and Procedures
(B)(9)(i)(iii)	Demand-side Management Program Policies and Procedures
(B)(9)(i)(v)	Customer Involvement

I. Policy and Goal Setting

The EE/PDR Department provides customer programs, products and services relating to energy efficiency and peak demand response to help AEP Ohio customers use energy more efficiently and manage their peak demand. These programs are tailored to all classes of customers and include customer education, incentive programs for various energy efficiency products and services, rate design to encourage off-peak usage, behavioral change programs and other programs to help customers manage their energy use. The EE/PDR Department oversees the achievement of corporate EE/PDR goals as well as compliance with regulatory and legislative mandates. The EE/PDR Department also evaluates, measures and verifies the energy and peak demand reductions attained through its programs to improve customer satisfaction and enhance cost effectiveness.

The EE/PDR manager is responsible for recommending and implementing EE/PDR policies for AEP Ohio. Policies related to EE/PDR are developed with input from AEP Ohio senior management and support from AEP corporate departments, including EE & Consumer Programs, Marketing and Load Research. The EE/PDR Department also supports corporate and AEP Ohio policies and objectives.

The EE/PDR manager, in consultation with the director - Customer Services & Marketing and EE/PDR reports, coordinates goal setting for the department. The criteria behind establishing goals include the current three-year Portfolio Plan filed and approved by the Public Utilities Commission of Ohio, shown in Exhibit II. Key drivers include safety, customer satisfaction, cost effectiveness, economic development, environmental stewardship and value to all stakeholders.

Performance of the EE/PDR Department is measured in customer satisfaction, EE and PDR target achievements and financial measures.

II. Strategic and Long-Range Planning

Planning for the EE/PDR Department is the responsibility of the EE/PDR manager in consultation with the director - Customer Services & Marketing and EE/PDR Department reports. In addition, support is provided in planning by corporate departments including EE & Consumer Programs, Marketing and Load Research.

Planning within the EE/PDR department generally is aimed at long-term strategies designed to provide customer satisfaction and achieve corporate and legislative targets for EE and PDR. The legislative targets are on a three-year planning cycle with increasing target requirements for EE through 2025 and

PDR targets through 2018. As of this filing, corporate targets are lower than legislative targets, and strategic focus presently is on the legislative requirements.

The EE/PDR Department's strategic and long-term planning process is done on a three-year cycle, with any adjustments primarily on an annual basis. As part of the three-year Portfolio Plan development, a market potential study has been completed with EE/PDR projections through 2028. Shown in Exhibit III, this study will be updated periodically to inform future three year Portfolio Plans. Planning decisions are tailored to support AEP Ohio, Corporate and legislative goals.

III. Organization Structure

The EE/PDR Department is under the direction of the manager - EE/PDR who reports to the director Customer Services & Marketing, who reports to the president and chief operating officer of AEP Ohio.

The department is organized into five main sections of responsibility, including consumer programs, business programs, compliance, special projects and education/training. The organizational chart is shown in Exhibit I.

Department employees include engineers, accountants, economists, marketers, business and those with other educational backgrounds.

The AEP corporate departments that provide support to the EE/PDR Department include:

- EE & consumer programs;
- marketing;
- load research;
- regulatory; and
- legal

IV. Decision-Making

Decision making is accomplished collaboratively among members of the EE/PDR Department team, AEP Ohio Corporate Communications, Customer Services & Marketing, Regulatory and AEP corporate departments. Decision making is handled through regular meetings, and all key decisions are subject to the review of the manager - EE/PDR and the AEP Ohio senior leadership team.

V. Ring Fencing

The principles of ring fencing in utility regulation were codified in various provisions of the Public Utility Holding Company Act of 1935, (PUHCA). American Electric Power Company, Inc., (AEP), was a registered public utility holding company under the PUHCA until that act was repealed in 2005. The separation of regulated utility functions from non-regulated businesses required by PUHCA and prevailing throughout the AEP system has not been altered or diluted as it relates to AEP Ohio since the repeal of PUHCA. As a result, AEP Ohio, as constituent public utilities within the AEP system, continues to benefit from the ring fencing protections set forth in the PUHCA. In practical terms, this means that AEP Ohio:

1. has not made any investment in any entity engaged in a non-regulated business;
2. has not made loans or extended credit to AEP or to any affiliate engaged in a non-regulated business; and
3. has not guaranteed the indebtedness or the obligations of AEP or any affiliate engaged in a non-regulated business.

AEP Ohio consists of two separate legal entities, Ohio Power Company and Columbus Southern Power Company. Each AEP Ohio utility is a registered issuer under federal securities acts; each has independent access to public capital markets through which each continually raises capital. Each AEP Ohio utility is independently rated by the nationally recognized statistical credit rating agencies. Each AEP Ohio utility is managed by a board of directors that is responsible for authorizing action, including the acquisition or disposition of material assets, issuances of securities, and declaration of dividends, in such a way as to preserve the credit ratings and creditworthiness of each entity.

On June 2, 2010, the Commission approved AEP Ohio's corporate separation plans, filed June 1, 2009, and specifically found that the corporate separation plans were adequately implemented by AEP Ohio in accordance with Section 4928.17, Revised Code, Chapter 4901:1-37, O.A.C., and the orders of the Commission. (Opinion and Order in Case No. 09-464-EL-UNC). With its corporate separation plans, AEP Ohio has in place structural safeguards to ensure the independent functioning of the companies and their affiliates in a manner which is consistent with the Commission's Code of Conduct and which rejects cross-subsidization. The companies' accounting protocols, approach to financial arrangements, adherence to the Cost Allocation Manual requirements, employee education and training and internal compliance monitoring each support the goals and policies set out in Section 4928.02, Revised Code.

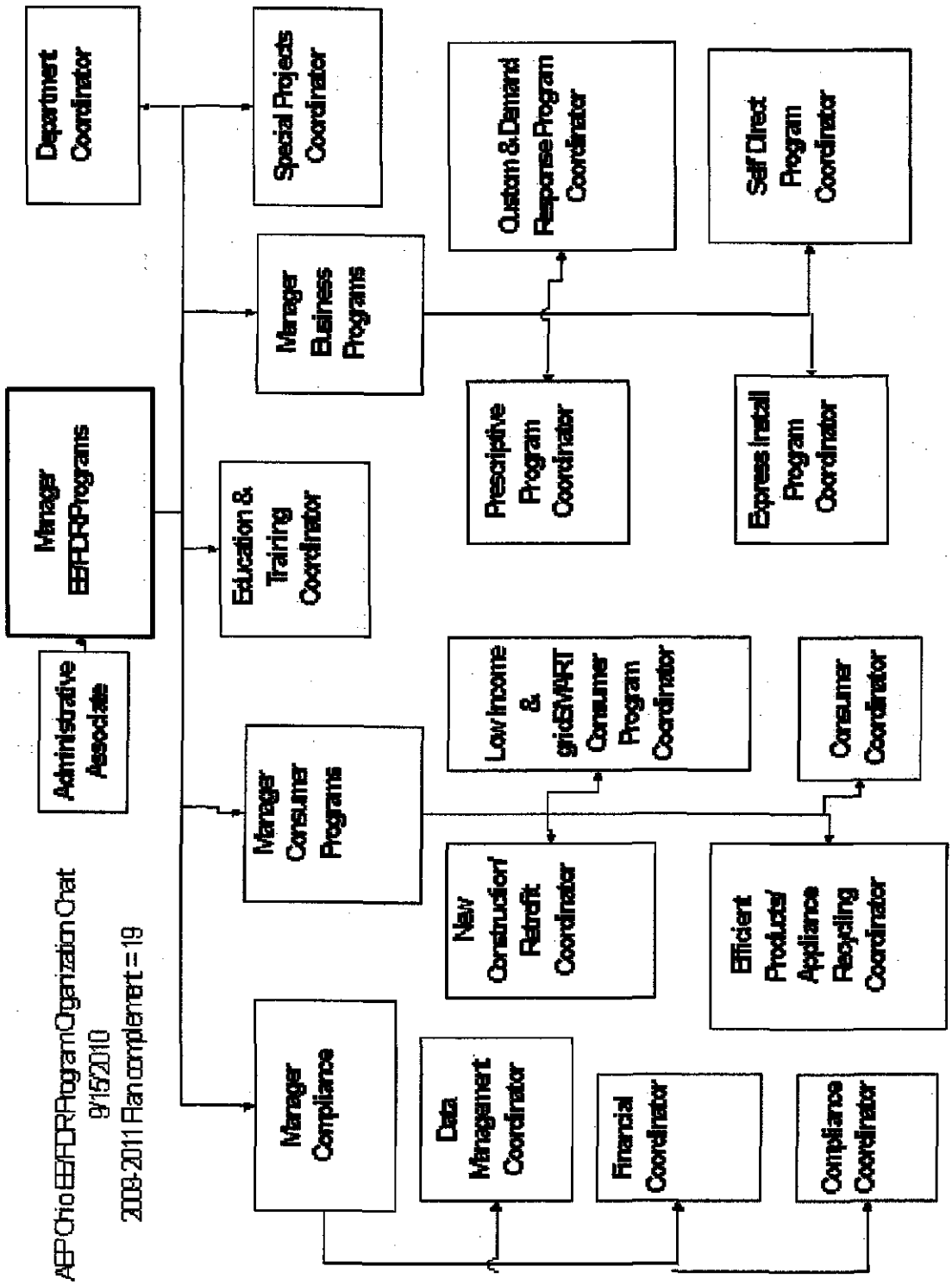
VI. Controlling Process

The execution of various functions and objectives are monitored and evaluated continuously by the compliance section of the EE/PDR Department, as well as the review of the manager-EE/PDR and is subject to all controls policies of AEP Ohio and AEP corporate.

VII. Internal and External Communications

Internal and external communications are accomplished through a variety of media – personal and telephone conversations, meetings, emails (both individual and group), electronic meetings and internal and external website postings.

Exhibit I – EE/PDR Organization Chart



VOLUME 1:

AEP OHIO®

A unit of American Electric Power

2009 TO 2011

ENERGY EFFICIENCY/ PEAK DEMAND REDUCTION (EE/PDR) ACTION PLAN

November 5, 2009

MEEA
Midwest Energy Efficiency Alliance

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AEP Ohio, comprised of Columbus Southern Power ("CSP") and Ohio Power Company ("OPC") is Ohio's 2nd largest provider of electric service with a mix of 1.45 million residential, commercial and diversified industrial customers. AEP Ohio provides among the lowest electric rates in Ohio, ensures high levels of customer satisfaction, and provides reliable utility service to its customers, which include more than 920 communities located in 61 of Ohio's 88 counties.

Ohio recently passed comprehensive energy legislation, which includes an advanced energy portfolio standard ("AEPS"), 2008 Senate Bill ("SB") 221, signed into law by Governor Ted Strickland on May 1, 2008.[1] The law directs Ohio utilities to implement programs to help their customers use electricity more efficiently, and requires electric utilities to achieve energy savings of 22.2% by the end of 2025 through energy efficiency programs. Utilities must also implement programs to reduce peak energy demand one percent beginning in 2009, and an additional 0.75% per year through 2018, for a total of 7.75%.

In response to the new legislative requirements, AEP Ohio is offering this three-year Energy Efficiency/Peak Demand Reduction ("EE/PDR") Action Plan ("Plan").[2] The EE/PDR Action Plan details a diverse portfolio of electric energy efficiency and demand response programs AEP Ohio intends to offer. Programs are available for all customer classes, including low-income residential.

This portfolio of electric EE/PDR programs was developed with the experienced and expert guidance of two outside consultants, Summit Blue Consulting and the Midwest Energy Efficiency Alliance ("MEEA"). AEP Ohio, Summit Blue and MEEA drew upon successful programs from other AEP operating utilities in other states, as well as other states, particularly the Midwest, and their combined program design and implementation experience with other utilities, in crafting AEP Ohio's program portfolio. AEP Ohio also convened a Collaborative group of interested parties to provide input to this EE/PDR Action Plan.

AEP Ohio believes it has an excellent portfolio of proven programs that will directly help its customers save money on their energy bills. AEP Ohio is committed to moving forward with the implementation of this EE/PDR Action Plan.

Note: due to the current economic downturn, AEP Ohio is not projecting peak demand savings from the Commercial & Industrial Demand Response Program in 2009 since the 2009 SB 221 target for peak demand savings likely will be satisfied without implementing this program in 2009.

[1] http://www.legislature.state.oh.us/bills.cfm?ID=127_SB_221

[2] The analysis conducted for this report largely was completed before the March 18, 2009 PUCO Order on AEP Ohio's Electric Security Plan.

E EXECUTIVE SUMMARY

Energy efficiency and peak demand reduction ("EE/PDR") represents an important resource for AEP Ohio, one growing increasingly important as fuel and commodity prices become more volatile and greenhouse gas regulation becomes more likely. Estimates of EE/PDR potential are a key input to the integrated resource planning process, which considers the load forecast and both supply- and demand-side resources. This study presents the results of an analysis of the EE/PDR potential in AEP Ohio's service territory by Summit Blue Consulting and the Midwest Energy Efficiency Alliance, in support of meeting the Electric Security Plan requirements of Senate Bill 221.

SB 221 requires electric utilities to achieve energy savings of 22.2% by the end of 2025 through energy efficiency programs. Utilities must also implement programs designed to reduce peak energy demand one percent beginning in 2009, and an additional 0.75% per year through 2018, for a total of 7.75%.[3] Table E-1 presents SB 221 requirements for 2009 to 2011, which is the focus of this EE/PDR Action Plan.

Table E-1. SB 221 Savings Requirements (at Meter) – 2009 to 2011

SB 221 Requirements				
at Meter	Energy Savings		Peak Demand Savings	
year	incremental	cumulative	incremental	cumulative
2009	0.3%	0.3%	1.00%	1.00%
2010	0.5%	0.8%	0.75%	1.75%
2011	0.7%	1.5%	0.75%	2.50%

AEP Ohio plans to meet the SB 221 savings requirements, while ensuring that all customer classes have energy saving opportunities. This EE/PDR Action Plan presents detailed information on the approach, energy efficiency and demand response measures and proposed incentive levels. We anticipate that portions of the EE/PDR Action Plan will need to be revised upon implementation to reflect better information or changing market conditions. AEP Ohio will update the Public Utilities Commission of Ohio ("PUCO") and the Collaborative regarding any substantive revisions to this EE/PDR Action Plan.

EE/PDR Action Plan Portfolio Summary

AEP Ohio is proposing to invest a total of $161.9 million (2009$) on energy efficiency and demand response programs and projects 842 GWh and 201 MW cumulative annual net savings at meter over a three-year period during calendar years 2009 to 2011. The division of EE/PDR program investment between residential and business customers is commensurate with the relative contribution to the portfolio.

[3] Energy and peak demand savings of preceding 3 years annual average, normalized kWh and kW sales.

Table E-2 provides the projected savings and associated funding for 2009 to 2011.

Table E-2. Savings Goals and Efficiency Portfolio Investment – 2009 to 2011

Consumer Sector (Incremental annual net savings at meter)	2009	2010	2011	2009-2011 Total
Energy Savings (GWh) (1)	62.8	109.9	135.9	**308.7**
% Savings of Sector Sales	0.41%	0.70%	0.87%	**1.98%**
Demand Savings (MW) (1)	7.3	15.1	17.6	**40.0**
% Savings of Sector Sales	0.21%	0.43%	0.50%	**1.15%**
Total Cost (2009$ *million*) (2)	$9.9	$16.8	$20.4	**$47.1**

Business Sector (Incremental annual net savings at meter)	2009	2010	2011	2009-2011 Total
Energy Savings (GWh) (1)	107.2	176.5	249.9	**533.6**
% Savings of Sector Sales	0.30%	0.50%	0.70%	**1.50%**
Demand Savings (MW) (1)	24.7	73.7	93.5	**161.4**
% Savings of Sector Sales	0.36%	1.07%	1.35%	**2.34%**
Total Cost (2009$ million)	$16.1	$25.5	$33.9	**$75.5**

Note: C&I Demand Response Program demand savings are not cumulative

Total (Incremental annual net savings at meter)	2009	2010	2011	2009-2011 Total
Energy Savings (GWh) (1)	170.0	286.4	385.8	**842.3**
% Savings of Sector Sales	0.33%	0.56%	0.75%	**1.65%**
Demand Savings (MW) (1)	32.0	88.8	111.1	**201.4**
% Savings of Total Sales	0.31%	0.86%	1.07%	**1.93%**
Total Cost (2009$ million)	$26.0	$42.3	$54.2	**$122.5**
Other Costs (2009$ million) (2)	$10.8	$11.5	$17.1	**$39.4**
Portfolio Total Investment (2009$)	$36.8	$53.8	$71.3	$161.9

(1) Savings are not projected for: Low Income Energy Conservation Kits, Behavior Modification, Self Direct Program, and Renewable Energy Technology Program. AEP Ohio will also conduct program evaluation and other essential program support functions, such as compliance and reporting, database management, contracting and payables and portfolio cost-benefit analysis. Some of the factors affecting the calculation of the baseline are pending subject to final PUCO order.

(2) Other Costs include support and other services, including: AEP Ohio EE/PDR Department, General Education/Training/Media, Low Income Energy Conservation Kits, Behavior Modification, Self Direct Program, Pilot Program Fund and Renewable Energy Technology Program.

Incentive levels and other program elements will be reviewed and adjusted to reflect changes in market conditions or implementation processes in order to maximize cost-effective savings. Such modifications will be reported in the annual reports submitted to the PUCO.

Figure E-1 presents the proposed portfolio structure, including five consumer sector and five commercial and industrial sector programs, as well as three multi-sector programs: renewable energy technology, education and training, and new pilots/emerging technology. AEP Ohio will also conduct program evaluation and other essential program support functions, such as compliance and reporting, database management, contracting and payables and portfolio benefit-cost analysis.

Figure E-1. EE/PDR Action Plan Portfolio Structure – 2009 to 2011

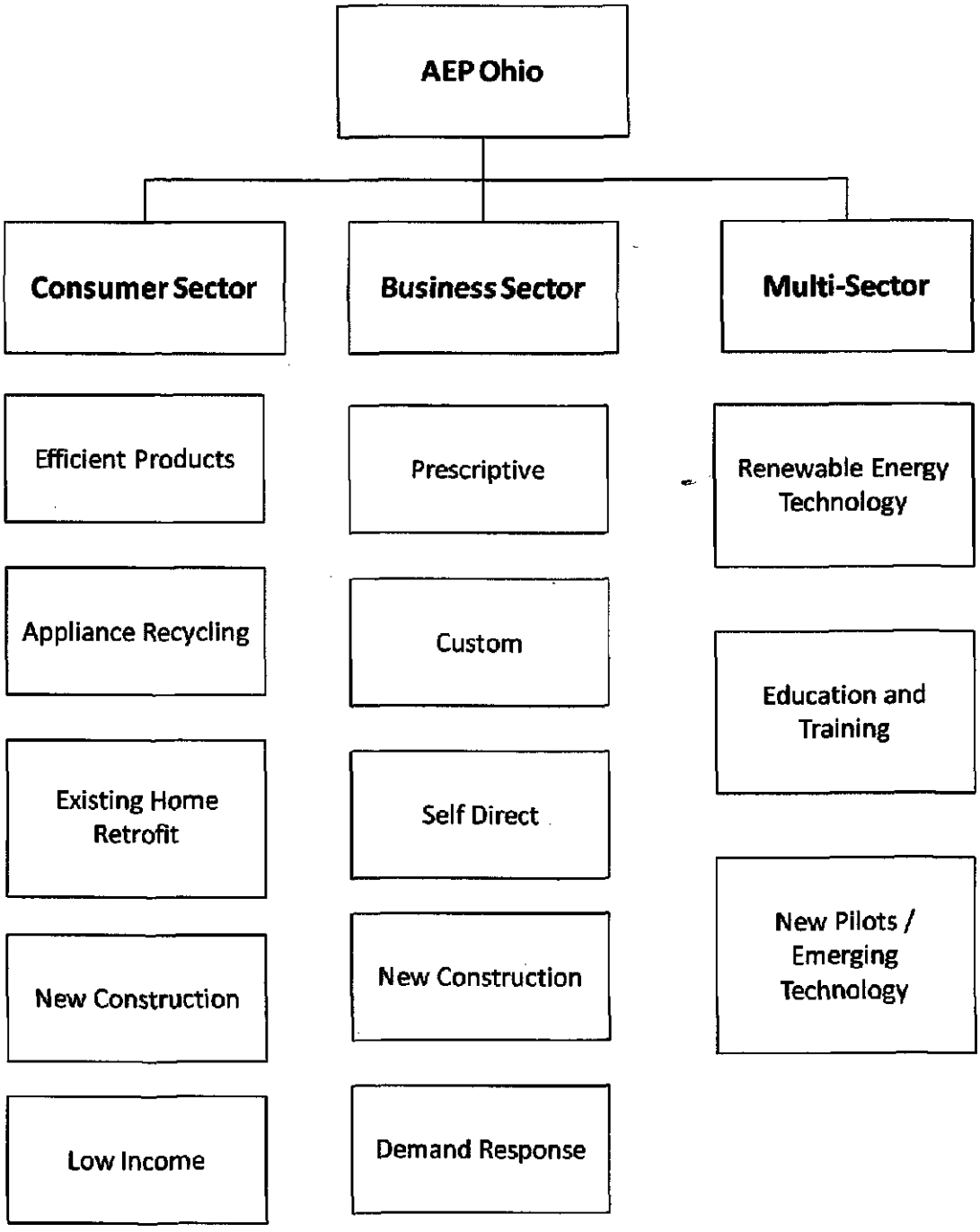


Table E-3 presents the projected MWh energy savings, Total Resource Cost ("TRC") Test results, Net Present Value Benefits in 2009$ million, Lifetime MWh Energy Saved and Lifetime Cost of Saved Energy in 2009$ per kWh over the three-year period from 2009 to 2011.

Table E-3. Annual Incremental Net Energy (MWh) Savings at Meter – 2009 to 2011

Consumer Sector	2009	2010	2011	2009-2011 Total	Percent of Portfolio Total	Total Resource Cost Test Ratio (TRC)	Net Present Value Net Benefits (2009 million)	Lifetime Energy Saved (thousand MWh)	Lifetime Cost of Saved Energy (2009/kWh)
Products	40,838	70,759	83,766	**195,364**	23.2%	2.2	$34.3	1,282	$0.012
Recycling	4,665	8,324	14,211	**27,200**	3.2%	1.4	$1.1	133	$0.030
Retrofit	5,194	7,558	10,447	**23,200**	2.8%	1.3	$2.9	277	$0.016
Low Income	12,149	17,640	23,400	**53,190**	6.3%	1.5	$8.6	720	$0.015
New Construction	0	5,663	4,081	**9,745**	1.2%	1.3	$2.7	195	$0.022
Consumer Sector Total	**62,846**	**109,944**	**135,906**	**308,697**	**36.7%**	**1.7**	**$49.6**	**2,608**	**$0.015**
% Total of Sector Sales	0.41%	0.70%	0.87%	Note: savings from Low income Energy Conservation Kits, Behavior Modification, Renewable Energy Technology are not projected.					

Business Sector	2009	2010	2011	2009-2011 Total	Percent of Portfolio Total	Total Resource Cost Test Ratio (TRC)	Net Benefits (2009 million)	Lifetime Energy Saved (thousand MWh)	Lifetime Cost of Saved Energy (2009/kWh)
Prescriptive	68,244	123,778	177,348	**369,371**	43.9%	2.1	$66.9	3,373	$0.012
Custom	37,565	49,750	69,622	**156,936**	18.6%	1.1	$3.9	2,226	$0.013
New Construction	0	1,496	1,382	**2,879**	0.3%	1.5	$0.8	69	$0.014
LED Traffic Signals	1,369	1,439	1,583	**4,391**	0.5%	1.8	$0.3	66	$0.005
Demand Response	0	0	0	**0**	0.0%	10.7	$24.5	-	-
Business Sector Total	**107,178**	**176,464**	**249,935**	**533,577**	**63.3%**	**1.8**	**$103.0**	**5,734**	**$0.014**
% Total of Sector Sales	0.30%	0.50%	0.70%	Note: savings from Self Direct Program are not projected.					

Table E-4 presents the projected summer peak demand kW savings levels over the three-year period from 2009 to 2011.

Table E-4. Annual Incremental Net Summer Peak Demand (kW) Savings at Meter – 2009 to 2011

Consumer Sector	2009	2010	2011	2009-2011 Total	Percent of Portfolio Total
Products	4,702	8,270	9,865	**22,837**	10.9%
Recycling	563	1,004	1,714	**3,280**	1.6%
Retrofit	616	892	1,225	**2,733**	1.3%
Low Income	1,433	2,084	2,764	**6,282**	3.0%
New Construction	0	2,845	2,051	**4,897**	2.3%
Consumer Sector Total	**7,314**	**15,095**	**17,620**	**40,029**	**19.1%**
% Total of Sector Sales	0.21%	0.43%	0.50%	Conservation Kits, Behavior Modification and Renewable Energy Technology are not projected.	
Business Sector	**2009**	**2010**	**2011**	**2009-2011 Total**	**Percent of Portfolio Total**
Prescriptive	21,409	38,744	55,462	**115,615**	55.2%
Custom	2,915	3,863	5,413	**12,190**	5.8%
New Construction	0	259	242	**500**	0.2%
LED Traffic Signals	331	348	382	**1,061**	0.5%
Demand Response	0	35,490	40,215	**40,215**	19.2%
Business Sector Total	**24,655**	**78,703**	**101,713**	**169,581**	**80.9%**
% Total of Sector Sales	0.36%	1.14%	1.47%	Note: savings from Self Direct Program are not projected.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Note: Demand Response Program demand savings are not cumulative					
% of Portfolio Total Sales	0.31%	0.90%	1.15%	incremental	
	0.31%	1.21%	2.01%	cumulative	

Table E-5 presents the estimated total emissions reductions in pounds based on the projected energy savings over the three-year period from 2009 to 2011.[4]

Table E-5. Total Emissions Reductions – 2009 to 2011

Cumulative Annual Emissions Reductions – 2009 to 2011						
Consumer Sector	**NO_x (tons)**	**SO_2 (tons)**	**CO_2 (tons)**	**CH_4 (lbs.)**	**N_2O (lbs.)**	**H_g (lbs.)**
Products	438	2,158	190,334	4,349	6,412	14.1
Recycling	61	300	26,499	605	893	2.0
Retrofit	52	256	22,602	516	761	1.7
Low Income	119	587	51,820	1,184	1,746	3.8
New Construction	22	108	9,494	217	320	0.7
Consumer Sector Total	**692**	**3,409**	**300,750**	**6,872**	**10,131**	**22.3**
	Note: emissions reductions from Low income Energy Conservation Kits, Behavior Modification, Renewable Energy Technology are not projected.					
Business Sector	**NO_x (tons)**	**SO_2 (tons)**	**CO_2 (tons)**	**CH_4 (lbs.)**	**N_2O (lbs.)**	**H_g (lbs.)**
Prescriptive	828	4,080	359,861	8,222	12,123	26.6
Custom	352	1,733	152,896	3,493	5,151	11.3
New Construction	6	32	2,805	64	94	0.2
LED Traffic Signals	10	49	4,278	98	144	0.3
Demand Response	0	0	0	0	0	0.0
Business Sector Total	**1,196**	**5,893**	**519,840**	**11,877**	**17,512**	**38.5**
	Note: emissions reductions from Self Direct Program are not projected.					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[4] Emissions factors from eGRIDweb, Year 2005 Data, Location (Operator)-based: Columbus Southern Power, http://cfpub.epa.gov/egridweb/view_egcl.cfm; Ohio Power Company, http://cfpub.epa.gov/egridweb/view_egcl.cfm.

EE/PDR Investment

The estimated investment for these programs, which would realize the EE/PDR program potential consistent with meeting SB 221 requirements for 2009 to 2011, in 2009 dollars, would be approximately $36.8 million in 2009, $53.8 million in 2010, and $71.3 million in 2011, for a total $161.9 million, as shown in Table E-6. The projected investments include one-time startup costs of 10% of administrative costs for the first year of program implementation.

Table E-6. Estimated Annual Total Investments by Program for AEP Ohio (2009$)

Consumer Sector	2009	2010	2011	2009-2011	% of Portfolio Total
Products	$3,441,732	$5,616,033	$6,434,867	$15,492,632	9.6%
Recycling	$1,193,527	$2,028,309	$3,462,740	$6,684,577	4.1%
Retrofit	$990,308	$1,273,138	$1,576,956	$3,840,402	2.4%
Low Income	$4,236,236	$5,485,211	$7,234,834	$16,956,281	10.5%
New Construction	$0	$2,430,906	$1,667,011	$4,097,916	2.5%
Consumer Sector Total	**$9,861,803**	**$16,833,596**	**$20,376,408**	**$47,071,808**	**29.1%**
Business Sector	**2009**	**2010**	**2011**	**2009-2011**	**% of Portfolio Total**
Prescriptive	$8,861,266	$12,906,212	$17,978,141	$39,745,619	24.5%
Custom	$6,958,741	$8,588,662	$11,724,734	$27,272,137	16.8%
New Construction	$0	$296,938	$246,016	$542,954	0.3%
LED Traffic Signals	$310,257	$326,164	$358,669	$995,090	0.6%
Demand Response	$0	$3,371,250	$3,545,625	$6,916,875	4.3%
Business Sector Total	**$16,130,264**	**$25,489,227**	**$33,853,185**	**$75,472,675**	**46.6%**
Other Costs	**2009**	**2010**	**2011**	**2009-2011**	**% of Portfolio Total**
AEP Ohio EE/PDR Department	$1,800,000	$3,200,000	$3,400,000	**$8,400,000**	5.2%
General Education/ Training/Media	$2,527,000	$3,822,000	$3,651,000	**$10,000,000**	6.2%
Energy Conservation Kits	$500,000	$500,000	$500,000	**$1,500,000**	0.9%
Behavior Modification	$500,000	$1,000,000	$1,500,000	**$3,000,000**	1.9%
Self Direct	$5,000,000	$2,000,000	$2,000,000	**$9,000,000**	5.6%
Pilot Program Fund	$500,000	$1,000,000	$6,000,000	**$7,500,000**	4.6%
Other Costs Total	**$10,827,000**	**$11,522,000**	**$17,051,000**	**$39,400,000**	**24.3%**
PORTFOLIO TOTAL	**$36,819,067**	**$53,844,823**	**$71,280,593**	**$161,944,483**	**100.0%**

To firm up cost estimates and make any necessary budget and schedule changes, AEP Ohio will issue RFP(s) for implementation contractors to bid on the work, and require them to submit detailed budgets along with estimated savings and implementation schedules. Any adjustments to the cost recovery mechanism will be trued up on an annual basis.

Job Creation

To capture the full economic impacts of the investments in energy efficiency, three separate effects (direct, indirect, and induced) must be examined for each change in expenditure. The sum of these three effects yields the total effect resulting from a single expenditure.

- The **direct effect** refers to the on-site or immediate effects produced by expenditures. In the case of installing energy efficiency upgrades in a home or business, the direct effect is the on-site expenditures and jobs of the construction or trade contractors hired to carry out the work.

- The **indirect effect** refers to the increase in economic activity that occurs when a contractor or vendor receives payment for goods or services delivered and is able to pay others who support their businesses. This includes the equipment manufacturer or wholesaler who provided the new technology. It also includes the bank that provides financing to the contractor, the vendor's accountant, and the building owner where the contractor maintains its local offices.

- The **induced effect** derives from the change in spending that energy efficiency investments enable. Businesses and households are able to meet their energy, heating, cooling, and lighting needs at a lower total cost, due to efficiency investments. This lower cost of doing business and operating households makes greater wealth available for businesses and families to spend or invest in other goods and services such as food, clothing, entertainment, or marketing (in the case of businesses).

Table E-7 shows the total number of jobs—direct, indirect, and induced—that are estimated would be created from investing $161.9 million in electric energy efficiency in AEP Ohio customer homes and businesses in 2009 through 2011. AEP Ohio estimates the number of jobs that will be created at approximately 1,500 direct jobs, 900 indirect jobs, and 750 induced jobs, for a total of approximately 3,150 total jobs created during the three-year period.[5] On average, one job will be created for approximately $51,400 in spending.

Table E-7. Number of Jobs Created (2009 through 2011)

2009 to 2011	Direct	Indirect	Induced	Total
Jobs Created	1,500	900	750	3,150

[5] Job creation estimates based on data from Green Recovery: A New Program to Create Good Jobs and Start Building a Low-Carbon Economy, pages 9 and 27, http://www.americanprogress.org/issues/2008/09/pdf/green_recovery.pdf

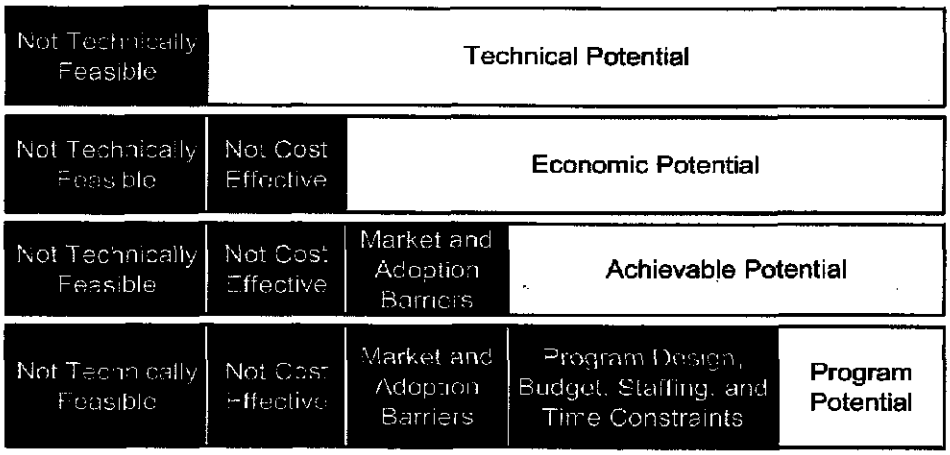
The next section discusses the approach to estimating EE/PDR potential. After that, there is an overview of EE/PDR Potential results for 2009 to 2028, followed by program plans, and finally conclusions and recommendations.

E.1 Approach to Estimating EE/PDR Potential

AEP Ohio's program portfolio was developed by incorporating elements of the most successful energy efficiency programs across North America into program plans designed for the Ohio market and AEP Ohio customers in particular. AEP Ohio used a benchmarking process to review the selected programs, with a focus on successful Midwest programs to help shape the portfolio.

As detailed in Figure E-2, there are four major types of energy efficiency potential: (1) *technical* potential for all technologies, (2) *economic* potential, the amount of energy efficiency available that is cost effective, (3) *achievable* potential, the amount of energy efficiency available under current market conditions and available investments, and (4) *program* potential, the amount of energy efficiency available given limited resources, available time and duration of the efficiency program planning period. AEP Ohio's EE/PDR Action Plan is focused on capturing cost-effective *program potential* in its service territory while achieving SB 221 requirements for 2009 to 2011. Energy efficiency measures that were known not to be cost-effective were pre-screened out of consideration from all potential scenarios.

Figure E-2. The Four Stages of Energy Efficiency Potential



Reproduced from "Guide to Resource Planning with Energy Efficiency November 2007" written by the US EPA. Figure 2-1

Summit Blue undertook the EE/PDR potential study with the following key tasks:

- Develop baseline consumption profiles, and develop initial building simulation model specifications
- Characterize the EE/PDR measures
- Conduct a EE/PDR benchmarking and best practices analysis
- Conduct benefit-cost analysis
- Estimate EE/PDR potentials
- Develop EE/PDR program plans

Each of these tasks is summarized below.

E.1.1 Develop Baseline Consumption Profiles and Develop Initial Building Simulation Model Specifications

Summit Blue conducted this task to characterize the AEP Ohio service territory, including Columbus Southern Power ("CSP") and Ohio Power Company ("OPC"), in terms of customer numbers, as well as age and size of the household/housing stock. Segment-level commercial and industrial sales data delivered by AEP Ohio provide a good starting point to determine customer energy use in broad end-use categories, such as lighting, heating, and cooling. These profiles were the calibration points in developing hourly computer models of energy consumption. The models are used to estimate savings from EE/PDR measures.

E.1.2 Characterize the EE/PDR Measures

Characterization of EE/PDR measures requires:

1) Estimating the baseline energy consumption for each end-use (heating, cooling, cooking, hot water, etc.) or unit energy consumption ("UEC")
2) Estimating the incremental savings from each measure – improving from the baseline to the new technology
3) Determining the incremental costs and lifetimes for each of the new technologies

In addition, the baselines must consider that different classes of buildings have different penetrations of technologies, such as existing homes compared to new construction.

Summit Blue used a combination of approaches to characterize the EE/PDR measures for this study. For the EE/PDR measures having impacts that do not vary with climate, we used engineering estimates and publicly available and well-respected sources, such as the California Database on Energy-Efficiency Resources ("DEER") database. We adjusted the DEER energy and demand impacts for AEP Ohio's customer operating parameters as necessary based on the local weather. For climate-dependent measures, Summit Blue used a combination of building simulation modeling and engineering estimates specifically developed for AEP Ohio to estimate EE/PDR measure per unit savings.

For EE/PDR measure costs, Summit Blue primarily used the California DEER database, adjusted by geographic multiplier factors contained in industry sources, such as the RS Means Mechanical Cost Data. For EE/PDR measure lifetimes, a combination of resources was used, including manufacturer data, typical economic depreciation assumptions, and the California DEER database.

E.1.3 EE/PDR Benchmarking and Best Practices Assessment

To ensure that the EE/PDR potential estimates that Summit Blue developed for AEP Ohio are reasonable and appropriate, and to identify the best practices regarding EE/PDR programs, we conducted a benchmarking assessment on other utilities' and agencies' EE/PDR programs. We also collected information on selected national EE/PDR programs that previous studies have identified as top performers. To identify common best practices of top performers, the analysis compares detailed program results by customer sector of those utilities identified as achieving high levels of EE/PDR savings for below median costs.

For the 14 electricity EE/PDR programs of the IOUs and agencies reviewed, the overall median energy savings as a percentage of annual sales for 2007 is 0.9% and the median first year costs for energy savings is $0.15/kWh, but the organizations with the largest relative energy savings and below median costs achieved their energy savings at about 1.3% of annual sales. The results for peak demand savings as a percentage of peak demand are similar: the median savings is 0.6% of peak demand and the median cost is $725/kW.

Most of the benchmarked organizations have been conducting electricity EE/PDR programs for an extended period. Since these organizations have been conducting electricity EE/PDR programs, savings have been realized from a lot of the "low hanging fruit" among EE/PDR measures, such as T12 lighting system conversions to T8 systems. A new EE/PDR program can reasonably be expected to achieve these results after an initial ramp up period of three to four years.

E.1.4 Benefit-Cost Analysis

The measures were evaluated with respect to each of the four main standard benefit-cost tests.[6]

Participant test: measures are cost effective from this perspective if the reduced electric costs to the participating customer from the measure exceed the after-incentive cost of the measure to the customer.

Utility (or program administrator) ("UCT") cost test: measures are cost effective from this perspective if the costs avoided by the measures' energy and demand savings are greater than the utility's EE/PDR program costs to promote the measure, including customer incentives.

Ratepayer impact measure ("RIM") test: measures are cost effective from this perspective if their avoided costs are greater than the sum of the EE/PDR program costs and the "lost revenues" caused by the measure.

Total resource cost ("TRC") test: measures are cost effective from this perspective if their avoided costs are greater than the sum of the measure costs and the EE/PDR program administrative costs.

In line with standard industry practice, Summit Blue used the TRC test to determine which EE/PDR programs to include in AEP Ohio's portfolio of EE/PDR programs. The RIM test is a more restrictive test that is only used as the main EE/PDR benefit-cost test in very few states.[7] All of the measures passed the TRC test. The portfolio of EE/PDR programs that Summit Blue developed is quite cost effective by industry standards with a total resource cost test ratio of 1.8. Table E-8 presents the overall benefit cost ratios for the consumer sector, the commercial and industrial sector, and the overall portfolio.[8]

[6] California Public Utilities Commission. California Standard Practice Manual Economic Analysis of Demand-Side Programs and Projects, October 2001, http://drrc.lbl.gov/pubs/CA-SPManual-7-02.pdf.

[7] Florida and Georgia, for example, require DSM programs to pass the RIM test.

[8] The analysis conducted for this report largely was completed before the March 18, 2009 PUCO Order on AEP Ohio's Electric Security Plan.

Table E-8. Cost-effectiveness Ratios – 2009 to 2011

Consumer Sector	Total Resource Cost Test (TRC)	Utility Cost Test (UCT)	Participant Cost Test (PCT)	Rate Impact Measure Test (RIM)
Products	2.2	3.2	6.3	0.5
Recycling	1.4	0.8	NA	0.3
Retrofit	1.3	2.0	3.9	0.5
Low Income	1.5	2.1	N/A	0.5
New Construction	1.3	2.0	2.6	0.7
Consumer Sector Total	**1.7**	**2.4**	**5.2**	**0.5**
Business Sector	**Total Resource Cost Test (TRC)**	**Utility Cost Test (UCT)**	**Participant Cost Test (PCT)**	**Rate Impact Measure Test (RIM)**
Prescriptive	2.1	3.3	3.4	0.7
Custom	1.1	2.2	2.5	0.5
New Construction	1.5	2.4	3.4	0.5
LED Traffic Signals	1.8	2.6	4.8	0.6
Demand Response	10.7	2.9	N/A	2.5
Business Sector Total	**1.8**	**2.8**	**3.1**	**0.7**
PORTFOLIO TOTAL	**1.8**	**2.7**	**3.6**	**0.6**

E.1.5 Estimate EE/PDR Program Potentials

Summit Blue developed estimates of EE/PDR measure potentials in terms of technical, economic, and "achievable" potential (the program results that are realistic for AEP Ohio to achieve through cost-effective EE/PDR programs). Economic potential was estimated using the TRC test as described above as the economic "screen" to apply to technical potential estimates in order to determine whether the measures are "cost-effective" or not.

To estimate achievable potential, a computer model was used to estimate conversion rates from inefficient products to more efficient products for retrofit and replacement measures, as well as installation rates in new buildings for new construction markets. These conversion, replacement, and new construction

penetration rates will be based on other utilities' actual experiences with these types of programs. Summit Blue developed three achievable potential estimates:

1. A base case or expected EE/PDR potential estimates. These estimates assume that adequate funding is available to achieve the EE/PDR potentials and that AEP Ohio is able to achieve "best practice" EE/PDR program performance within three to four years, over the short term, from 2009 to 2011.

2. A high case estimate based on the experience of the best of the best utilities' EE/PDR program results, to meet the SB 221 requirements over the long term, through 2028.

3. A low case estimate, assuming that either the available funding for EE/PDR programs is constrained, or that the EE/PDR program performance is such that average EE/PDR program results are achieved over the forecast period.

E.2 EE/PDR Potential Results

The cumulative net annual EE/PDR potential savings (Base Case Scenario Market Potential) in 2028 is estimated to be approximately 8 thousand GWh at meter, about 14% of forecast sales, and approximately 1,400 MW at meter, about 12% of peak summer demand, as shown in Table E-9. Table E-9 also presents the projected savings in 2028 for the technical, economic, and high and low market potential scenarios. The technical and economic potential estimates are more uncertain than the market potential results since surveys of AEP Ohio's customers were not conducted.

These results assume a net-to-gross impact ratio of 1.0 in most instances whereby free ridership is assumed for this analysis to be offset by spillover impacts, except for the recycling of second refrigerators and freezers. The Base Case market potential meets the SB 221 savings targets over the short term, from 2009 to 2011. The high case market potential meets the SB 221 cumulative savings targets over the long term, through 2028. The Base Case market potential includes incentives at 50% of incremental measure costs in most instances. The High Case market potential includes incentives at 75% of incremental measure costs, while the Low Case includes incentives at 25% of incremental measure costs.

Table E-9. Projected Cumulative Annual Net Savings at Meter and Costs – 2028

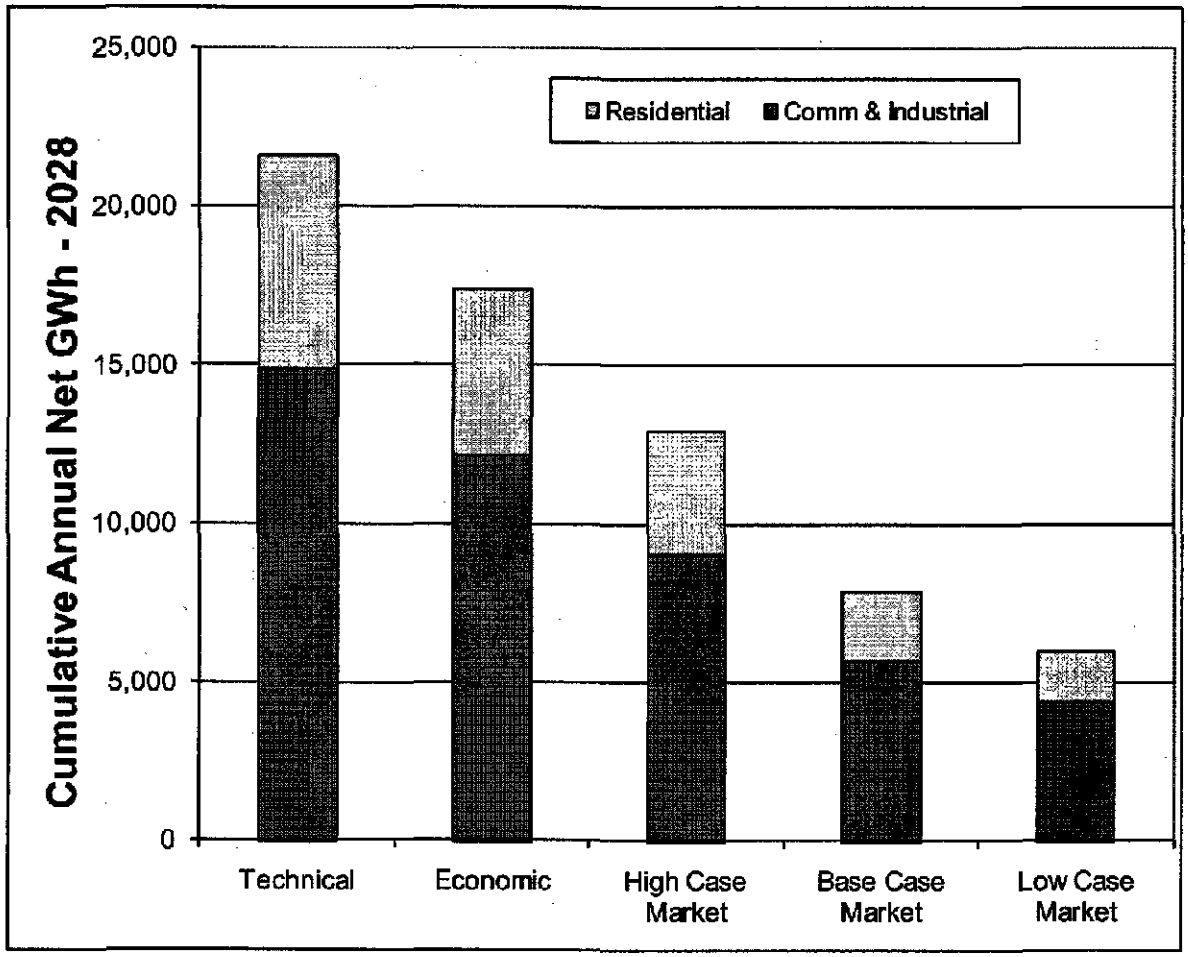
Potential Scenario	Cumulative Annual Net Energy Savings (1) at Meter (2028)		Cumulative Annual Net Summer Peak Demand Savings (1) at Meter (2028)		Total Cost (Energy Efficiency Only) (2)
Residential	GWh	% of 2028 Forecast Sales	MW	% of 2028 Forecast Sales	20 Year Cost (2009 to 2028) - 2009$ million
Technical	6,678	38%	1,222	30%	-
Economic	5,218	30%	719	18%	-
High Case	3,868	22%	699	17%	$1,050
Base Case	2,200	13%	328	8%	$414
Low Case	1,573	9%	221	5%	$255
Comm & Industrial					
Technical	14,892	36%	2,404	30%	-
Economic	12,163	29%	1,920	24%	-
High Case	9,024	22%	1,536	19%	$1,577
Base Case	5,692	14%	1,110	14%	$801
Low Case	4,425	11%	883	11%	$502
Total					
Technical	21,570	37%	3,626	30%	-
Economic	17,381	29%	2,639	22%	-
High Case	12,912	22%	2,235	18%	$2,627
Base Case	7,893	14%	1,438	12%	$1,214
Low Case	5,998	10%	1,104	9%	$757

(1) Savings are not included for: Demand Response, Low Income Energy Conservation Kits, Behavior Modification, Self Direct Program, and Renewable Energy Technology Program. AEP Ohio will also conduct program evaluation and other essential program support functions, such as compliance and reporting, database management, contracting and payables and portfolio cost-benefit analysis.

(2) Costs are not included for: AEP Ohio EE/PDR Department, General Education/Training/Media, Demand Response, Low Income Energy Conservation Kits, Behavior Modification, Self Direct Program, Pilot Program Fund and Renewable Energy Technology Program.

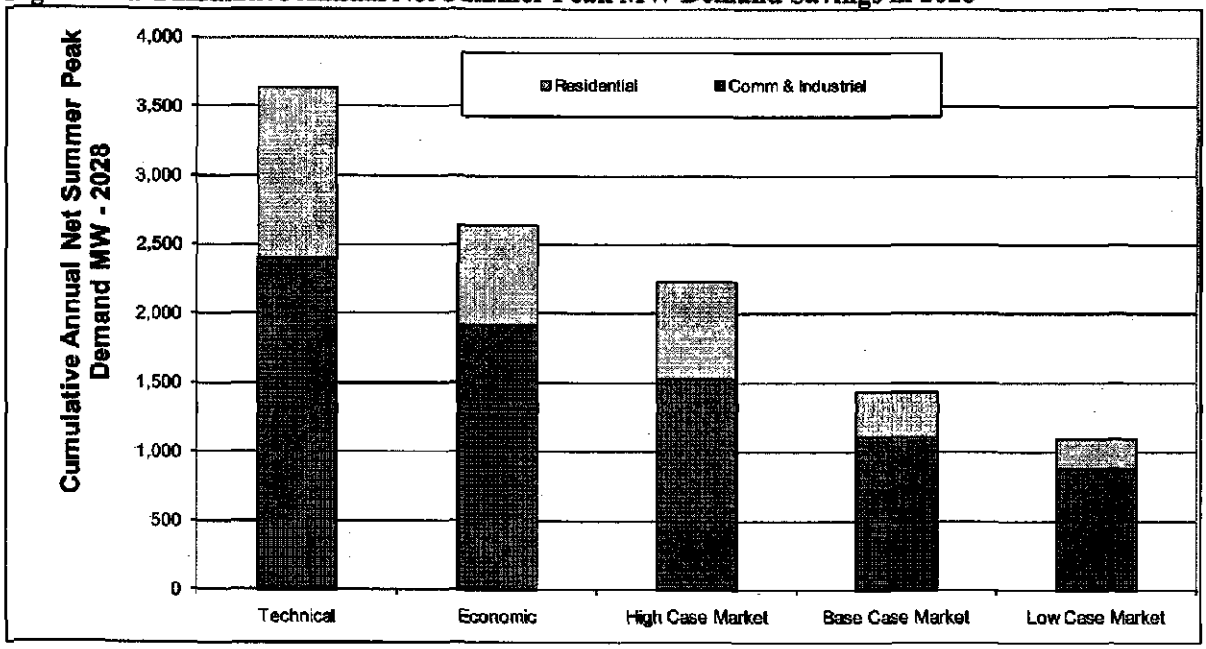
Figure E-3 and Figure E-4 show the cumulative annual net energy and summer peak demand savings in 2028 for each of the five potential analysis scenarios.

Figure E-3. Cumulative Annual Net GWh Energy Savings in 2028



(1) Savings are not included for: Demand Response, Low Income Energy Conservation Kits, Behavior Modification, Self Direct Program, and Renewable Energy Technology Program. AEP Ohio will also conduct program evaluation and other essential program support functions, such as compliance and reporting, database management, contracting and payables and portfolio cost-benefit analysis.

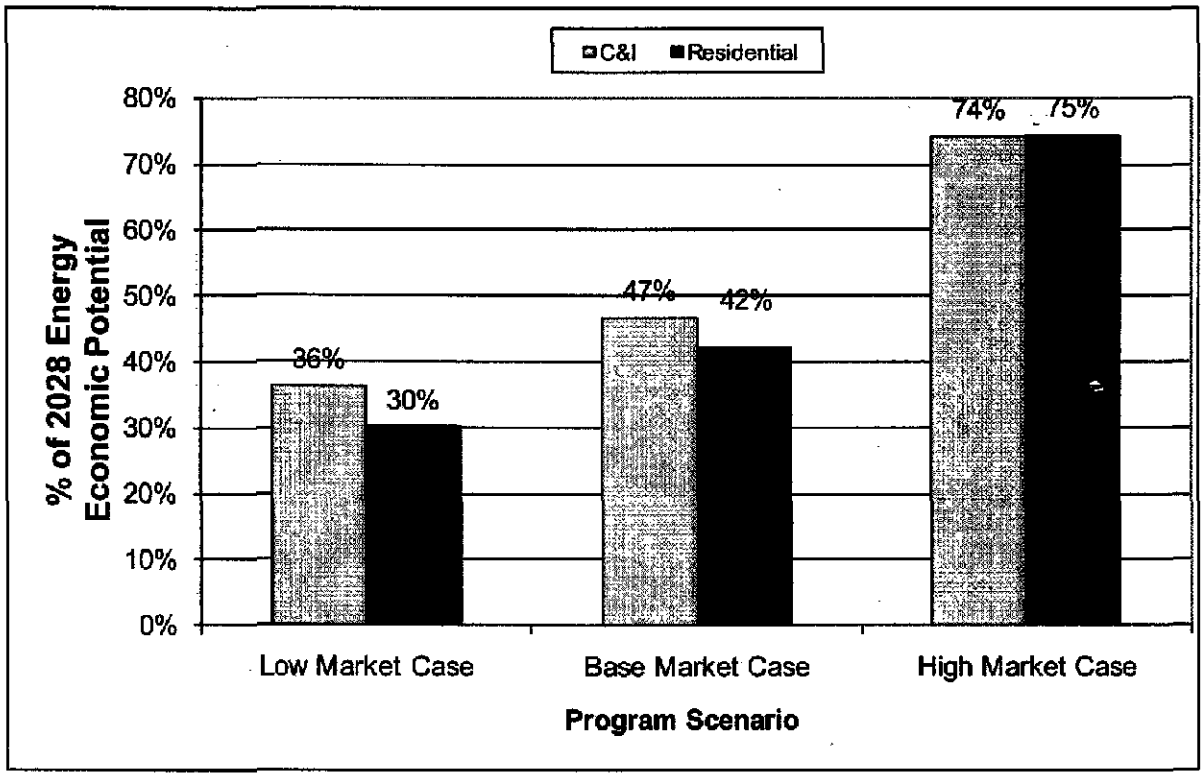
Figure E-4. Cumulative Annual Net Summer Peak MW Demand Savings in 2028



(1) Savings are not included for: Demand Response, Low Income Energy Conservation Kits, Behavior Modification, Self Direct Program, and Renewable Energy Technology Program. AEP Ohio will also conduct program evaluation and other essential program support functions, such as compliance and reporting, database management, contracting and payables and portfolio cost-benefit analysis.

Figure E-5 and Figure E-6 show the cumulative Market Potential[9] as a percent of the Economic Potential for energy efficiency.

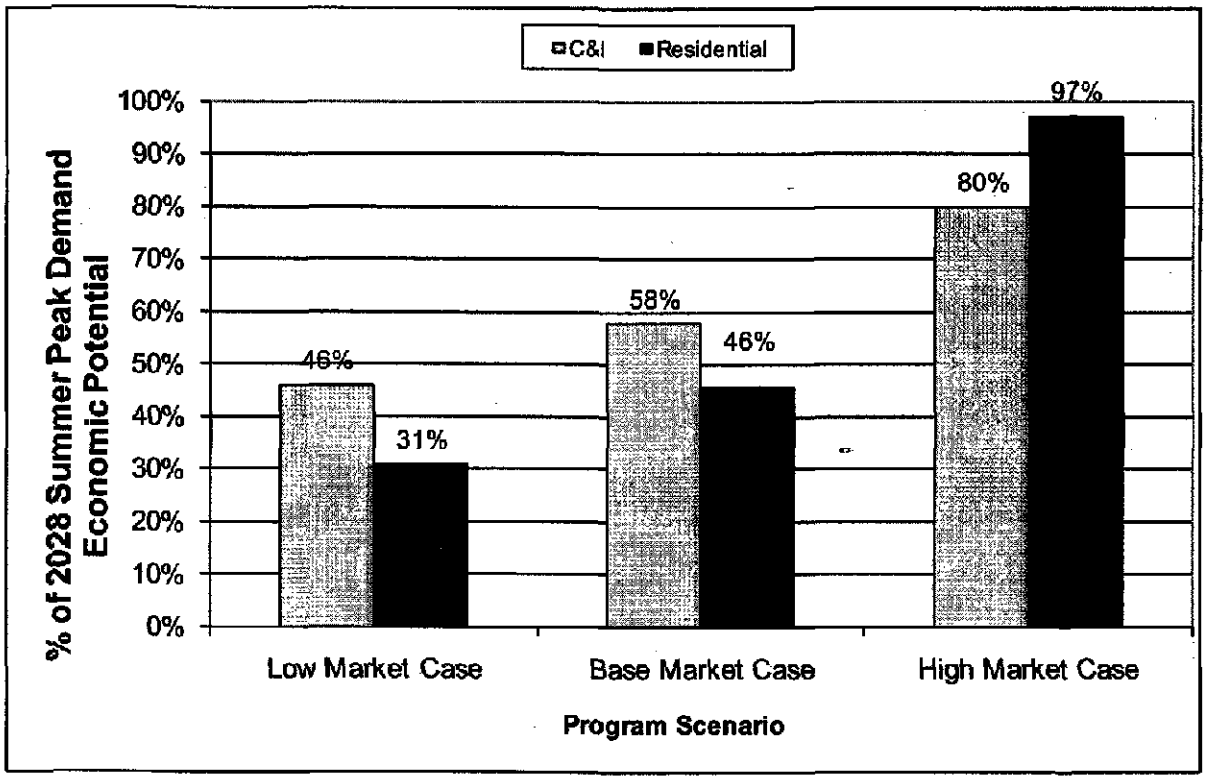
Figure E-5. Market Potential Net Annual Energy Savings at Meter as Percent of Economic Potential in 2028



(1) Savings are not included for: Demand Response, Low Income Energy Conservation Kits, Behavior Modification, Self Direct Program, and Renewable Energy Technology Program. AEP Ohio will also conduct program evaluation and other essential program support functions, such as compliance and reporting, database management, contracting and payables and portfolio cost-benefit analysis.

[9] Defined here as the potential achievable in real-world market risk situations.

Figure E-6. Market Potential Net Summer Peak Demand Savings at Meter as Percent of Economic Potential in 2028



(1) Savings are not included for: Demand Response, Low Income Energy Conservation Kits, Behavior Modification, Self Direct Program, and Renewable Energy Technology Program. AEP Ohio will also conduct program evaluation and other essential program support functions, such as compliance and reporting, database management, contracting and payables and portfolio cost-benefit analysis.

E.3 Overview of Program Plans

The plans developed for this study are based on best-practice programs, with the concepts outlined in a strategic manner. The plans are not intended to be operational per se, but are proposed as guidelines for more detailed program planning. The intent of the portfolio presented here is to provide a sense of scope and scale and to convey the general schedule and resources needed to quickly gain a foothold in the various markets in which the programs will operate.

Overall, a portfolio is presented that covers a broad range of demographic, business, facility and end-use markets. AEP Ohio's portfolio of programs can be divided into consumer, business and multi-sectors with utility administrative functions providing support across for all program areas. AEP Ohio will maintain as part of its functionality the education, training and emerging technology budgets. These efforts will leverage existing AEP corporate connections and efforts to maximize impact of these outreach and education efforts.

Consumer Sector

Efficient Products: will provide incentives and marketing support through retailers to build market share and usage of ENERGY STAR® lighting and other standardized equipment not requiring substantial engineering. Customer incentives encourage increased purchases of high-efficiency products while in-store signage, sales associate training, and support make provider participation easier. The program also will promote convenient recycling for CFLs at local retailers.

For appliances, the program will use a retail channel-based strategy to influence the purchase of high-efficiency appliances and electronics. Since appliance standards, as well as the market share of high-efficiency appliances, are gradually increasing, the program will be specific in its list of qualifying models, as well as marketing emphasis.

Appliance Recycling: Many of the refrigerators and freezers being replaced are still functioning, and, often end up as energy guzzling back-up appliances in basements and garages or are sold in a used appliance market. The Appliance Recycling Program will target these "second" refrigerators and freezers, providing the dual benefit of cutting energy consumption and keeping the appliances out of the used market. The program will provide incentives to remove working units from service and fully recycle their materials. The program offers an environmentally responsible turnkey pick-up and recycling service.

Home Retrofit: will produce long-term electric energy savings in the consumer sector by helping customers analyze and reduce their energy use through the installation of upgraded shell measures, such as air sealing, insulation and high efficiency equipment. A free online analysis will be offered followed by the option of a walk-through audit costing the customer between $25 and $150, (subject to reimbursement for those implementing at least $1,000 in efficiency improvements). The plan is to start with a "captive contractor" model to increase completion rates of recommended measures, eventually leading to a more traditional market-based Home Performance Retrofit with ENERGY STAR program in the later years. The three program phases are: Phase 1: On-line Energy Analysis; Phase 2: Home Walk-Through Energy Analysis; Phase 3: Home Performance Retrofit with ENERGY STAR.

Low Income: will provide recommendations to encourage low-income consumers to install efficient equipment, provide financial assistance to cover the full cost of implementation, and educate customers with limited income to reduce their energy use and manage their utility costs. The program will coordinate low-income services with local weatherization providers to provide comprehensive assistance at lower administrative costs.

Energy Conservation Kits: provides a free or reduced cost package of energy saving do it yourself measures for a variety of programs that are evaluated to be cost effective such as school programs to educate students who take the package home to install the measures with their parents and other programs to distribute the kits to educate customers and provide energy savings. The kits include the following: four CFL lamps, switch and outlet gaskets, furnace filter whistle, hot water temperature card, self-stick energy use gauge thermometer, close-cell foam weather-strip, self-stick door sweep, flow meter bag, low-flow showerhead, and refrigerator thermometer card.

ENERGY STAR® New Homes: will produce long-term electric energy savings by encouraging the construction of single-family homes and duplexes to meet the ENERGY STAR National Performance Path efficiency standard. The program will identify and recruit key builders who do not consistently (or seldom) build homes to meet the ENERGY STAR standard. Builders who choose to participate in the program will gain access to cash-back incentives designed to cover approximately 30% of the cost to upgrade and certify each home. Guidance for design and construction of high-efficiency homes will be provided.

Business Sector

Prescriptive Incentive: will generate energy savings for all business customers through the promotion of high-efficiency standardized equipment not requiring substantial engineering. Three primary objectives will focus on increasing: market share, installation rates, and operating efficiency. Incentives typically ranging from 20% to 50% of the incremental cost to purchase energy efficient products, including, lighting, HVAC, motors, etc., will be offered to customers. LED Traffic Signals are included in this program.

Custom: will assist larger commercial and industrial customers with the analysis and selection of high-efficiency equipment or processes not covered under the Prescriptive Incentive program. The program approach will identify more complex energy savings projects, provide economic analysis and aid in the completion of the incentive application. Incentives will be based on energy savings on a per kWh and per kW basis for installed measures.

Self Direct: As specified in Senate Bill 221 of the 127th Ohio General Assembly ("SB 221"), commercial and industrial "mercantile" customers that consume more than 700,000 kWh per year of AEP Ohio electricity or are part of a national account involving multiple facilities in one or more states are eligible to request participation in the Self Direct Program. The Self Direct Program allows mercantile customers to commit their energy efficiency and demand response resources to AEP Ohio.

C&I New Construction: provides design assistance to the architects and engineers that are designing new buildings. The key design assistance tool is building simulation modeling of more efficient building designs. Provide incentives to new facility owners for the installation of high-efficiency lighting, HVAC, building envelope, refrigeration and other equipment and controls. Provide a marketing mechanism for architects and engineers to promote energy efficient new buildings and equipment to end users.

Demand Response: includes a Commercial and Industrial Interruptible/Curtailable Rates Program for non-residential customers in the AEP Ohio service territory that includes fixed rate discounts for non-residential customers who contract to reduce their loads to a specific and pre-determined level during peak demand periods. For 2009 to 2011, the program will be available to Columbus Southern Power customers only, based on AEP Ohio interpretation of allowance of existing interruptible contracts.

Multi-Sector

Renewable Energy Technology: Residential and commercial grid-connected customers in new or existing single family and multifamily homes and duplexes, as well as commercial applications up to 100 kW will be eligible for incentives for the installation of photovoltaic solar electric and wind electric systems.

General Energy Education: This program will coordinate AEP Ohio's efforts to create customer awareness for the programs, enhance demand and educate customers on energy efficiency.

Training: The program will coordinate the C&I training programs offered, or supported, by AEP Ohio. Initial trainings would likely include commercial and industrial facility engineers. The goal is to broaden AEP Ohio's reach to its customers and to provide assistance for customers seeking higher efficiency equipment.

New Pilots/Emerging Technology: The program objective is to identify and learn more about new energy efficient technologies to capture additional electric energy savings. There are numerous pilot program potentials addressing all classes of customers. Initially the program will focus on proven programs that capture significant energy savings. Later other innovative technologies, including solid state lighting, plug load and consumer electronics, will be explored.

Portfolio Implementation

AEP Ohio plans to implement the proposed portfolio of programs through a combination of in-house utility staff and competitively selected third-party implementation contractors. AEP Ohio will issue Requests for Proposals ("RFP"s) to qualified firms related to multiple RFPs for the delivery of similar programs targeting specific sectors. AEP Ohio believes that by issuing multiple RFPs, it will be possible to obtain more competitive, cost-effective and qualified implementation responses. Implementation contractors are eligible to respond to one or all of the RFPs. From start to finish, AEP Ohio anticipates the process of issuing RFPs, evaluating responses and negotiating contracts along with associated program start-up time will result in 2009 launch date for most programs. The remaining programs will begin later due to a need for longer preparation time prior to launch.

Evaluation, Measurement and Verification

Program evaluation, measurement, and verification ("EM&V") activities are central to the success of the AEP Ohio portfolio. EM&V will be used to validate program savings impacts, monitor program performance and ensure that incentives paid are proportionate to expected savings in order to make adjustments for future expected savings. These activities serve as a way to audit, both internally and independently, the actual level of savings being delivered and to maximize the savings achieved for the given program investment.

Appropriate EM&V requires that a framework be established that encompasses both planned EM&V efforts and data collected as part of program implementation. EM&V efforts evolve over time and change as programs move from initial rollout with few participants to full-scale implementation. The AEP Ohio EM&V budget is expected to be approximately 3-5% of the overall portfolio investment.

All evaluation activities will be conducted by third-party, evaluation consultants selected through a competitive bidding process. To ensure objectivity, impact evaluations are most often performed by

organizations independent of those responsible for designing and implementing programs. Process evaluations and market effects studies typically are also prepared by independent evaluators. This approach ensures the program evaluation effort is fair and objective. Process evaluations in particular are used less to verify performance than to help improve program implementation processes and thus require active participation by the program administrator/implementer.

Implementation and/or evaluation support contractors will assist in the development of key program and evaluation related components including:

- Validation of deemed savings estimates for prescriptive measures in a Technical Reference Manual ("TRM"). The TRM will detail all measure savings assumptions, including base efficiency, high efficiency, measure size, measure life, free ridership, and spillover estimates.
- Review of the EE/PDR Action Plan Portfolio tracking system that captures measure and/or project data, develops initial estimates of savings, and retains participant information to assist with subsequent EM&V activities
- Direct market baseline research and market characterization to support improved implementation
- Review of program and measure cost-effectiveness

The overall evaluation approach is based on an *integrated cross-disciplinary model* that includes evaluators as members of "project teams" involved in the various stages of program planning, design, monitoring and evaluation. This is a cost-effective method that has been highly successful for other utilities. Although some of these activities are inherently program management and therefore the responsibility of AEP Ohio, we believe all parties are best served by including the established Collaborative group in the evaluation process. This will allow all parties to shape the structure of the evaluation process both initially and as a function of the evaluation results.

Program and Portfolio Risk

In summer 2009, the Ohio economy remains in the midst of a severe economic recession. In this economic environment, AEP Ohio's ability to convince business customers to voluntarily take on additional debt for the installation of cost-effective measures, even with very short pay-back periods, will likely be challenging. AEP Ohio recognizes this challenge and we have striven to develop a balanced portfolio of programs that provides opportunities for participation at multiple levels. By proposing a multi-faceted and broad portfolio of programs, we will be able to capitalize on those sectors of the market willing to invest in energy efficiency, regardless of the challenging economic landscape. This portfolio plan is designed to allow us to meet overall legislative efficiency goals.

AEP Ohio plans to use the following strategies to minimize the risks associated with its portfolio of energy efficiency programs:

- Implementing primarily "tried and true" programs that have been successfully implemented by many utilities in the Midwest and across the country
- Hiring program implementation contractors with significant experience in implementing EE/PDR programs in the Midwest and other regions
- Initiating program evaluation activities at the start of program implementation to get real-time feedback on program progress, and to allow any needed fine-tuning to occur as soon as possible

- Setting up post installation inspection procedures and data to collect before inspections begin
- Anticipating and preparing for stronger than expected market response
- Conducting adequate market checks on standard practices and energy efficient product availability
- Developing incentive structures that are simple to understand
- Creating simple participation rules
- Monitoring and responding to rapidly dropping equipment prices quickly
- Setting appropriate qualifying efficiency levels
- Setting appropriate incentive levels
- Roll out targeted marketing to contractors focusing on what's in it for them and how they participate
- Adequately training account managers on program rules
- Carefully establishing documentation, analysis methods and reporting requirements for technical studies
- Managing the pipeline of projects and establishing decision deadlines so the response time to those waiting for decisions is reasonable

E.4 Conclusions and Recommendations

The EE/PDR potential (Base Case Scenario Market Potential) identified in this study represents energy reductions of approximately 13% for AEP Ohio residential customers and 14% for commercial and industrial customers below forecasted levels and known enacted energy codes and standards by 2028, or approximately 0.7% per year. This magnitude of savings has been achieved by best practice program portfolios in the Midwest, Northeast and Western U.S. Summer peak demand and annual energy reductions of the magnitudes found for the Base Market Potentials case are being achieved by a variety of utilities. Meeting the SB 221 targets over the long term, through 2028, will require energy reductions on the order projected in the High Case Scenario Market Potential, which have been achieved by few jurisdictions to date.

Over time, AEP Ohio will need to increase EE/PDR activities beyond the Base Case Scenario Market Potential for 2009 to 2011 to achieve the projected long term savings in the High Case Scenario Market Potential. Based on the results from the initial three-year period and consideration of additional program and measure offerings, in 2011, AEP Ohio will propose EE/PDR efforts beyond the initial three-year period, 2009 to 2011, to meet the SB 221 savings goals for 2012 to 2015.

The EE/PDR benchmarking analysis results presented in this report should give AEP Ohio management confidence that a variety of utilities in the region and throughout the country are achieving large-scale results from their EE/PDR programs. It should be noted, however, that this level of impact is based on historical economic conditions; going forward, economic uncertainties are likely to negatively affect the market potential.

The largest sources of uncertainty regarding the estimates that Summit Blue has developed to date for AEP Ohio stem from using secondary information to profile AEP Ohio's customers. It is uncertain how well the primarily regional and national estimates used for current EE/PDR measure saturations apply to AEP Ohio's customers. This is particularly the case for commercial and industrial customers, where the secondary sources used included Department of Energy customer surveys such as the Commercial Building Energy Consumption Survey.

The EE/PDR program plans that Summit Blue developed are based on the best practice results from the analysis of utility EE/PDR program results. These program plans build on several common elements that have been identified by the analysis conducted:

- Large impacts are being realized from both lighting and multi-product energy efficiency programs for both consumer and commercial sectors
- Significant impacts are being achieved from new construction energy efficiency programs
- Custom incentive energy efficiency programs have produced significant impacts for some utilities

Utilities that choose to significantly invest in EE/PDR programs often make significant periodic investments to develop and update secondary best-practice and primary market research data to aid their EE/PDR program planning. For example, Xcel Energy in Minnesota conducts large-scale market assessments and EE/PDR potential studies that include significant on-site customer data collection every five to ten years. The Iowa utilities conduct EE/PDR potential studies about every five years to support their periodic EE/PDR program filings with their regulators. These utilities collected significant customer data as part of their 2008 EE/PDR potential study.

Recommendations to consider include the following:

- Move the results into operational planning
- Utilize an outsourcing strategy to jump-start key aspects of the portfolio and associated infrastructure and internal organizational development
- Engage in long-term organizational development to assure performance and AEP Ohio brand continuity, as well as strong internal oversight over the life of the portfolio

1 INTRODUCTION

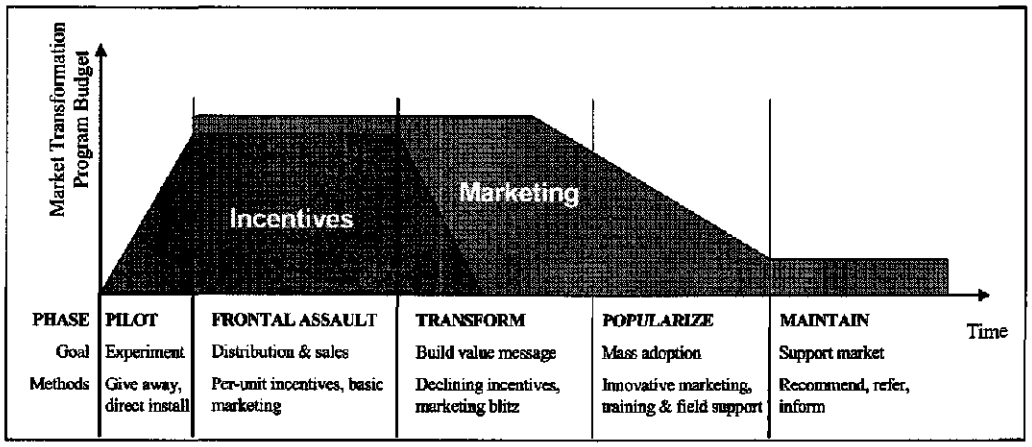
AEP Ohio, comprised of Columbus Southern Power ("CSP") and Ohio Power Company ("OPC"), and based in Columbus, is Ohio's 2nd largest provider of electric service with a mix of 1.45 million residential, commercial and diversified industrial customers. Pursuant to the requirements in 2008 Senate Bill ("SB") 221, AEP Ohio has developed this EE/PDR Action Plan for calendar years 2009 to 2011.

The following EE/PDR Action Plan presents a detailed overview of the proposed electric efficiency programs targeted at the consumer, business sectors, and associated implementation costs, savings, and benefit-cost results. This plan presents detailed information on the approach, energy efficiency measures, and proposed incentive levels, though AEP Ohio anticipates that, upon implementation, portions of this plan will need to be revised to reflect better information or changing market conditions. AEP Ohio will update the PUCO accordingly regarding any substantive revisions to the Plan.

Together with stakeholders and industry experts Summit Blue Consulting and the Midwest Energy Efficiency Alliance ("MEEA"), AEP Ohio has designed a comprehensive portfolio of EE/PDR programs to deliver significant electric efficiency savings. These programs include incentive and buy down approaches for energy efficient products and services, educational and marketing approaches to raise awareness and enhance demand, and partnerships with trade allies to apply as much leverage as possible to augment the rate-payer dollars invested. Proper coordination between the programs is essential to maximizing this leverage.

As detailed in Figure 1-1, AEP Ohio anticipates that over time investment in energy efficiency measures will follow a predictable path of market transformation that has been experienced in other jurisdictions. With sustained levels of investment, promotion of efficient measures will in the early years focus on immediate up-front incentives to stimulate the marketplace. Overtime, funds will be transitioned to marketing, training, education, and awareness to sustain program participation. Furthermore, as certain markets become transformed, and the baseline conditions become the efficient options, program resources will be transferred to new program areas and new technologies, and the process will repeat. Each series of the market transformation process will result in greater and more efficient opportunities for residential and business customers.

Figure 1-1. Phases of Energy Efficiency Promotion



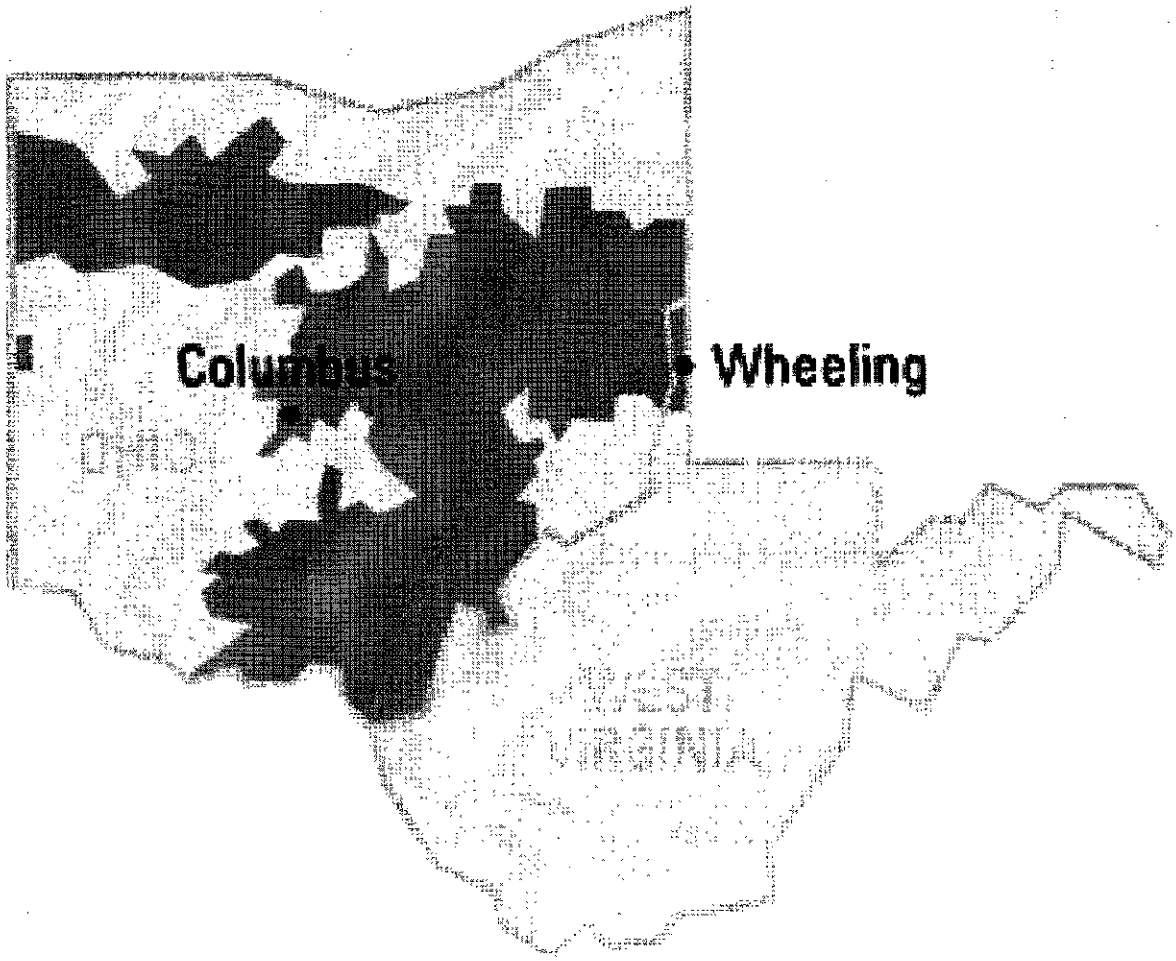
Source: ENERGY STAR® YEAR 3 AND BEYOND, Presentation by Anne Wilkins, NRCAN, 2005

Demand Side Management ("DSM") is the planning and implementation of programs and services that help and encourage customers to use electricity as efficiently as possible. DSM represents an important resource for AEP Ohio, one growing increasingly important as fuel and commodity prices become more volatile and greenhouse gas regulation becomes more likely. Estimates of DSM or (EE/PDR) potential are a key input to the integrated resource planning process, which considers the load forecast and both supply and demand-side resources. This study presents the results of an analysis of the EE/PDR potential in AEP Ohio's service territory by Summit Blue Consulting and the Midwest Energy Efficiency Alliance.

1.1 AEP Ohio Overview

As described on AEP Ohio's website, the Company is a significant utility in the Midwest. With about 1.45 million customers and over 11,000 megawatts of generation, AEP Ohio has a strong market presence. Figure 1-2 presents AEP Ohio's service territory, which spans a large geographic area in Ohio, as well as a small portion of West Virginia[10]. AEP Ohio provides power to more than 920 communities located in 61 of Ohio's 88 counties.

Figure 1-2. AEP Ohio's Service Territories



[10] AEP Ohio's West Virginia service territory is not included in this report.

Table 1-1 outlines key statistics for Columbus Southern Power and Ohio Power Company.

Table 1-1. AEP Ohio Key Statistics[11]

AEP Ohio's Business Profile 2006 Statistics	
Operating Information	
Total Customers	1,450,161
Residential	1,269,776
Commercial	166,575
Industrial	10,884
Other	2,926
2006 electrical sales in megawatt-hours	44,829,240
Size of service area (asset)	11,425 square miles
Communities served	901
Net plant in service	$7.5 billion
Size of distribution system	44,866 miles
Size of transmission system	8,938 circuit miles
Total number of AEP Ohio employees	1,540
Financial Information	
2006 Operating Revenue	$4.4 billion
2006 Net for Common	$413 million
2006 Ohio Taxes Paid	$159.3 million
2006 Local Taxes Paid	$145.3 million
Top 10 Customers (by revenue)	
The Ohio State University	The Timken Company
Eramet Marietta Inc.	Wheeling Pittsburgh - WHX HQ
State of Ohio	Premcor Refining Group, Inc.
The Kroger Company	Republic Engineered Products, LLC
Nationwide Insurance Enterprise	Globe Metallurgical, Inc.

[11] http://www.aepohio.com/about/serviceTerritory/docs/AEPOhioFactSheets08.pdf

Study Goals and Approach

The overall goals of the EE/PDR potential study are to:

- Assess the technical, economic, and achievable potential for the residential, commercial and industrial sectors
- Develop high-level EE/PDR program plans

Summit Blue undertook the EE/PDR potential study in the following key tasks:

- Develop baseline consumption profiles, and develop initial building simulation model specifications
- Characterize the EE/PDR measures
- Conduct a EE/PDR benchmarking and best practices analysis
- Conduct benefit-cost analysis
- Estimate EE/PDR potentials
- Develop program plans

These steps are discussed in more detail in chapters of the report.

1.2 Volume 1 2009 to 2011 EE/PDR Action Plan Report Organization

The remainder of AEP Ohio's Volume 1 EE/PDR Action Plan is divided into the following sections:

Section 2: Portfolio Development provides an overview of the process used and considerations in developing this portfolio of programs.

Section 3: Program Portfolio Summary provides a high-level overview of the selected portfolio of programs.

Section 4: Portfolio Summary Results details the summary results of portfolio electric savings, investment allocations and benefit-cost results.

Section 5: Consumer Program Descriptions presents detailed program plans for AEP Ohio's proposed consumer programs.

Section 6: Business Program Descriptions presents detailed program plans for AEP Ohio's proposed business programs.

Section 7: Portfolio Implementation presents an overview of AEP Ohio' approach to delivering the proposed programs through a combination of in-house staff resources and third-party implementation contractors.

Section 8: Portfolio Management details the management approach and areas of coordination AEP Ohio will apply in managing program delivery.

Section 9: Evaluation, Measurement and Verification provides a comprehensive overview to the various levels of EM&V activities AEP Ohio plans to carry out to ensure programs are achieving intended goals with the minimum of program expenditures.

Section 10: Glossary defines key terms used in the report.

Volume 2 – 2009 to 2028 EE/PDR Potential Study: presents the EE/PDR potential study results.

Volume 3 – Appendices A-D: includes several detailed appendices are provided in the report, including overall Benchmarking results (Appendix A), Best Practice Residential Programs (Appendix B), Best Practice Commercial and Industrial Programs (Appendix C), Measure Descriptions and Characterizations (Appendix D), and References (Appendix E).

2 PORTFOLIO DEVELOPMENT

Based on a national review of leading energy efficiency programs, AEP Ohio is proposing a balanced portfolio of EE/PDR programs that will achieve significant and immediate energy savings, while establishing trade ally and retailer partnerships resulting in lasting market transformation. AEP Ohio's programs will target all major sectors and customer classes, including low-income and small business customers.

AEP Ohio plans to offer a diverse portfolio of "tried and true" major programs (some of which include sub-program components) across the residential, commercial and industrial sectors. In this plan, AEP Ohio also proposes several pilot programs targeting experimental opportunities, as well as a broad-based education and awareness program offering.

2.1 Portfolio Goals and Objectives

AEP Ohio's high level efficiency-related goals and objectives for the 2009-2011 EE/PDR Portfolio are as follows:

- Meet SB 221 resource acquisition goals for 2009 to 2011, while laying the groundwork for long term market transformation
- Design and implement a diverse group of programs that provide opportunities for participation for all customers
- When feasible, maximize opportunities for program coordination with other efficiency programs to yield maximum benefits
- Maximize program savings at a minimum cost by striving to achieve comprehensive cost-effective savings opportunities
- Provide AEP Ohio customers with a single website to access information on all efficiency programs (residential and business) for electricity savings opportunities
- Expand the energy efficiency infrastructure in the state - for example, increasing the number of available qualified contractors
- Transform the market for efficient technologies and highly qualified efficiency-oriented trade allies (such as electricians, HVAC contractors, builders, architects and engineers)
- Inform and educate customers and students to enable them to use energy more efficiently

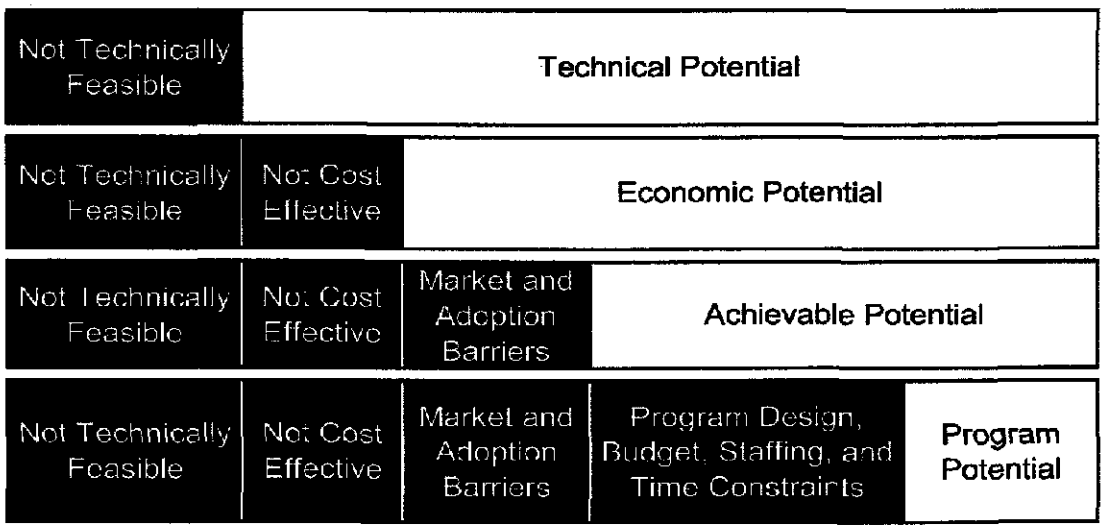
2.2 Planning Process

AEP Ohio hired Summit Blue Consulting and the Midwest Energy Efficiency Alliance, two nationally recognized leaders in the energy efficiency field, to assist with the design and preparation of this EE/PDR Action Plan.

AEP Ohio's portfolio of programs incorporates elements of the most successful energy efficiency programs across North America into program plans designed for the Ohio market and AEP Ohio customers in particular. A substantial amount of information including evaluation studies was used to develop specific programs for AEP Ohio. AEP Ohio also used a benchmarking process to review the most successful energy efficiency programs from across the country, with a focus on successful Midwest programs to help shape the portfolio.

As detailed in Figure 2-1, there are four major types of energy efficiency potential: (1) *technical* potential for all technologies, (2) *economic* potential, the amount of energy efficiency available that are cost effective, (3) *achievable* potential, the amount of energy efficiency available under current market conditions and available investments, and (4) *program* potential, the amount of energy efficiency available given limited resources, available time and duration of the efficiency program planning period. AEP Ohio's EE/PDR Action Plan is focused on capturing cost-effective *program potential* in its service territory while achieving SB 221 requirements for 2009 to 2011.

Figure 2-1. Four Stages of Energy Efficiency Potential



Reproduced from "Guide to Resource Planning with Energy Efficiency November 2007" written by the US EPA, Figure 2-1.

2.3 Portfolio Risk Management

In 2009, the Ohio economy remains in the midst of a severe economic recession. In this economic environment, our ability to convince business customers to voluntarily take on additional debt for the installation of cost-effective measures, even with very short pay-back periods, will likely be challenging. AEP Ohio recognizes this challenge and we have striven to develop a balanced portfolio of programs that provides opportunities for participation at multiple levels. By proposing a multi-faceted and broad portfolio of programs, we will be able to capitalize on those sectors of the market willing to invest in energy efficiency, regardless of the challenging economic landscape. In balance, this will allow us to meet overall legislative efficiency goals.

AEP Ohio used the following strategies to minimize the risks associated with its portfolio of energy efficiency programs:

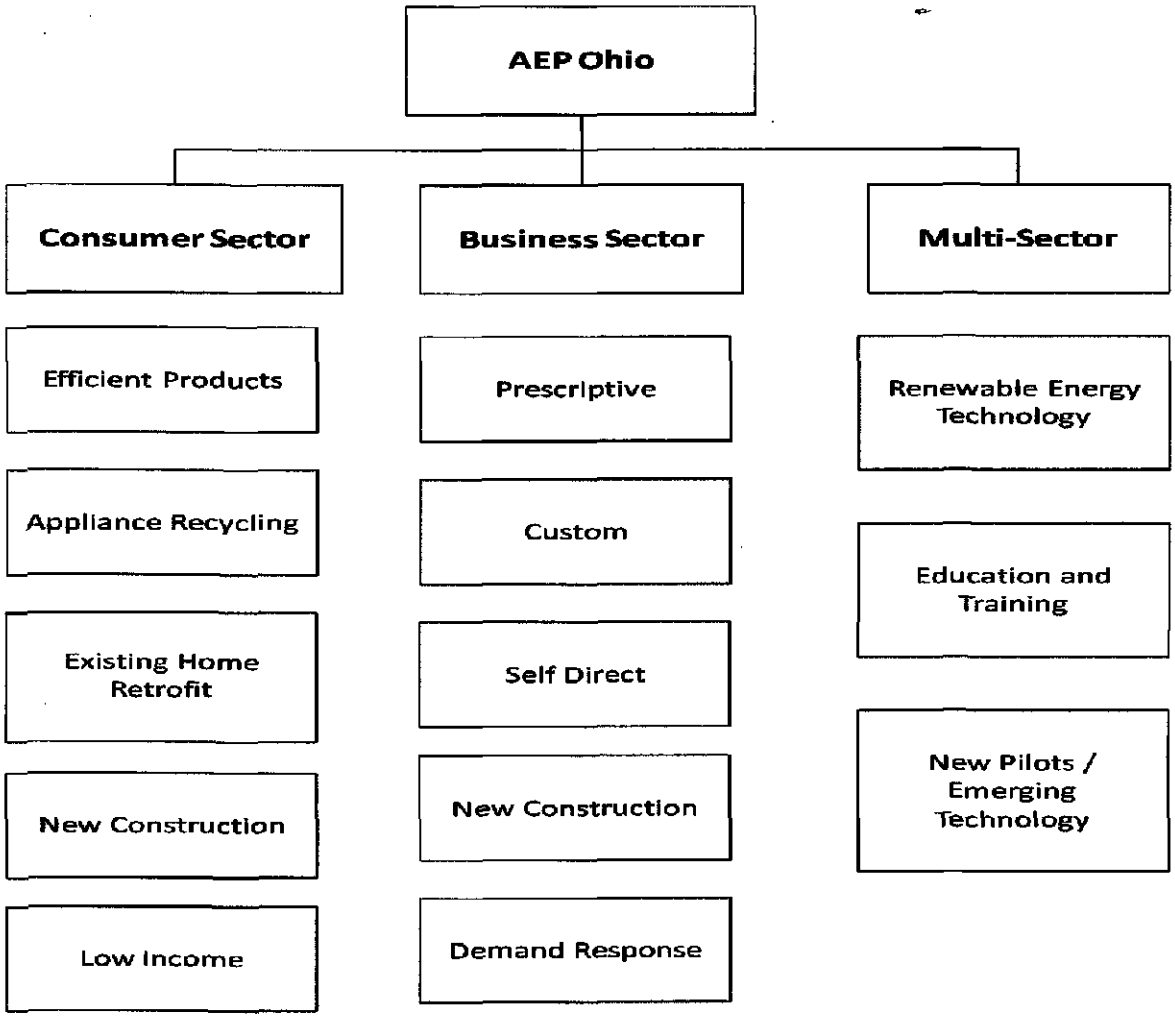
- Implementing primarily "tried and true" programs that have been successfully implemented by many utilities in the Midwest and across the country
- Hiring program implementation contractors with significant experience in implementing EE/PDR programs in the Midwest and other regions
- Initiating program evaluation activities at the start of program implementation to get real-time feedback on program progress, and to allow any needed fine-tuning to occur as soon as possible

3 PROGRAM PORTFOLIO SUMMARY

The following section presents a brief introduction to AEP Ohio's proposed efficiency programs. As demonstrated in Figure 3-1, AEP Ohio's portfolio of programs can be divided into consumer, business and multi- sectors with utility administrative functions providing support across for all program areas.

It is important to note that, for the purposes of presenting the details of this portfolio, we use the word "program" to define a specific market sector or technology end-use type and to detail projected savings, costs and cost-effectiveness. For planning purposes, it is helpful to separate the portfolio into these multiple "programs". Upon implementation, however, it will be a priority to present the programs in a market oriented manner - that is, a range of efficiency opportunities to address entire sectors which AEP Ohio believes will make customer participation more straightforward.

Figure 3-1. AEP Ohio Portfolio of Programs



4 EE/PDR PROGRAM PLANS

The plans developed for this study are based on best-practice programs, with the concepts outlined in a strategic manner. The plans are proposed as guidelines for more detailed program planning; they are not intended to be operational *per se*. The intent of the portfolio presented here is to provide a sense of scope and scale, and convey the general schedule and resources needed to quickly gain a foothold in the various markets in which the programs will operate.

The performance targets of the program plans are based on normal economic conditions and the ability to overcome a variety of market barriers and perceived risks customers have regarding energy efficiency improvements and load management. Problems commonly encountered that affect delivery may occur and dampen program performance include a variety of real and perceived risks in undertaking efficiency improvements or participating in load management programs:

- Reliability of the efficiency improvement, whether real or perceived
- Fit with existing facilities and processes
- Return on investment and cash flow effects compared to other financial and operating priorities
- Unfamiliarity with the technology leading to non-participation
- Availability of funds or credit to purchase the improvement
- Concern about occupant comfort and other aesthetics

Overall, a portfolio is presented that covers a broad range of demographic, business, facility, and end-use markets. AEP Ohio's portfolio of programs can be divided into consumer, business and multi-sectors with utility administrative functions providing support across for all program areas. AEP Ohio will maintain as part of its functionality the education, training and emerging technology ("R&D") budgets. These efforts will leverage existing AEP corporate connections and efforts to maximize impact of these outreach and education efforts. The following section presents a summary of the services offered in each program.

4.1 Programs Summary

Consumer Sector

Efficient Products: will provide incentives and marketing support through retailers to build market share and usage of ENERGY STAR® lighting and other standardized equipment not requiring substantial engineering. Customer incentives encourage increased purchases of high-efficiency products while in-store signage, sales associate training, and support make provider participation easier. The program also will promote convenient recycling for CFLs at local retailers.

For appliances, the program will use a retail channel-based strategy to influence the purchase of high-efficiency appliances and electronics. Since appliance standards, as well as the market share of high-efficiency appliances, are gradually increasing, the program will be specific in its list of qualifying models, as well as marketing emphasis.

Appliance Recycling: Many of the refrigerators and freezers being replaced are still functioning, and, often end up as energy guzzling back-up appliances in basements and garages or are sold in a used appliance market. The Appliance Recycling Program will target these "second" refrigerators and freezers,

providing the dual benefit of cutting energy consumption and keeping the appliances out of the used market. The program will provide incentives to remove working units from service and fully recycle their materials. The program offers an environmentally responsible turnkey pick-up and recycling service.

Home Retrofit: will produce long-term electric energy savings in the consumer sector by helping customers analyze and reduce their energy use through the installation of upgraded shell measures, such as air sealing, insulation and high efficiency equipment. A free online analysis will be offered followed by the option of a walk-through audit costing the customer between $25 and $150, (subject to reimbursement for those implementing at least $1,000 in efficiency improvements). The plan is to start with a "captive contractor" model to increase completion rates of recommended measures, eventually leading to a more traditional market-based Home Performance Retrofit with ENERGY STAR program in the later years. The three program phases are: Phase 1: On-line Energy Analysis; Phase 2: Home Walk-Through Energy Analysis; Phase 3: Home Performance Retrofit with ENERGY STAR.

Low Income: will provide recommendations to encourage low-income consumers to install efficient equipment, provide financial assistance to cover the full cost of implementation, and educate customers with limited income to reduce their energy use and manage their utility costs. The program will coordinate low-income services with local weatherization providers to provide comprehensive assistance at lower administrative costs.

Energy Conservation Kits: provides a free or reduced cost package of energy saving do it yourself measures for a variety of programs that are evaluated to be cost effective such as school programs to educate students who take the package home to install the measures with their parents and other programs to distribute the kits to educate customers and provide energy savings. The kits include the following: four CFL lamps, switch and outlet gaskets, furnace filter whistle, hot water temperature card, self-stick energy use gauge thermometer, close-cell foam weather-strip, self-stick door sweep, flow meter bag, low-flow showerhead, and refrigerator thermometer card.

ENERGY STAR® New Homes: will produce long-term electric energy savings by encouraging the construction of single-family homes and duplexes to meet the ENERGY STAR National Performance Path efficiency standard. The program will identify and recruit key builders who do not consistently (or seldom) build homes to meet the ENERGY STAR standard. Builders who choose to participate in the program will gain access to cash-back incentives designed to cover approximately 30% of the cost to upgrade and certify each home. Guidance for design and construction of high-efficiency homes will be provided.

Business Sector

Prescriptive Incentive: will generate energy savings for all business customers through the promotion of high-efficiency standardized equipment not requiring substantial engineering. Three primary objectives will focus on increasing: market share, installation rates, and operating efficiency. Incentives typically ranging from 20% to 50% of the incremental cost to purchase energy efficient products, including lighting, HVAC, motors, etc., will be offered to customers. LED Traffic Signals are included in this program.

Custom: will assist larger commercial and industrial customers with the analysis and selection of high-efficiency equipment or processes not covered under the Prescriptive Incentive program. The program approach will identify more complex energy savings projects, provide economic analysis and aid in the completion of the incentive application. Incentives will be based on energy savings on a per kWh and per kW basis for installed measures.

Self Direct: As specified in Senate Bill 221 of the 127th Ohio General Assembly ("SB 221"), commercial and industrial "mercantile" customers that consume more than 700,000 kWh per year of AEP Ohio electricity or are part of a national account involving multiple facilities in one or more states are eligible to request participation in the Self Direct Program. The Self Direct Program allows mercantile customers to commit their energy efficiency and demand response resources to AEP Ohio.

C&I New Construction: provides design assistance to the architects and engineers that are designing new buildings. The key design assistance tool is building simulation modeling of more efficient building designs. Provide incentives to new facility owners for the installation of high-efficiency lighting, HVAC, building envelope, refrigeration and other equipment and controls. Provide a marketing mechanism for architects and engineers to promote energy efficient new buildings and equipment to end users.

Demand Response: includes a Commercial and Industrial Interruptible/Curtailable Rates Program for non-residential customers in the AEP Ohio service territory that includes fixed rate discounts for non-residential customers who contract to reduce their loads to a specific and pre-determined level during peak demand periods. For 2009 to 2011, the program will be available to Columbus Southern Power customers only, based on AEP Ohio interpretation of allowance of existing interruptible contracts.

Multi-Sector

Renewable Energy Technology: Residential and commercial grid-connected customers in new or existing single family and multifamily homes and duplexes, as well as commercial applications up to 100 kW will be eligible for incentives for the installation of photovoltaic solar electric and wind electric systems.

General Energy Education: Grade 4th-8th Energy Education for Elementary Education Classrooms. The program intent is to influence students and their families to take actions that can reduce their home energy use and increase efficiency. The implementation contractor will work directly with the Ohio Department of Education to introduce the program to schools throughout the state. All educational materials and take-home efficiency kits will be free of charge to the schools.

Training: The program will coordinate the consumer and C&I training programs offered, or supported, by the utility. These programs would be AEP sponsored and draw from corporate account managers and marketing departments. Initial trainings would likely work with commercial and municipal building engineers (such as the Building Operator Certification training) as well as consumer HVAC and weatherization contractors (through MEEA's Participating Energy Efficiency Contractor network). The goal is to broaden AEP's reach to its customers and to provide assistance for customers seeking higher efficiency trained contractors.

New Pilots/Emerging Technology: The program objective is to identify and learn more about new energy efficient technologies to capture additional electric energy savings. There are numerous pilot program potentials addressing residential energy use. Initially the program will focus on proven programs that capture significant energy savings. Later other innovative technologies, including solid state lighting, plug load and consumer electronics, will be explored.

The program plans below provide greater detail on the programs summarized above according to:

- Objectives
- Target Markets
- Duration

- Description
- Incentive Strategy
- Eligible measures
- Implementation Strategy
- Marketing Strategy
- Milestones
- EM&V Strategy
- AEP Ohio Administrative Requirements
- Budget
- Savings Targets
- Benefit-cost Test Results

5 EE/PDR PORTFOLIO SUMMARY RESULTS

5.1 Portfolio Framework & Summary

AEP Ohio is proposing to invest a total $161.9 million (2009$) on energy efficiency programs during calendar years 2009 to 2011. The division of targeted efficiency program investment between residential and business customers is commensurate with the relative contribution to the EE/PDR portfolio.

The plan maximizes the amount of program funds that go directly to customers through rebates and incentives, training and technical assistance, and customer and trade ally education. This portfolio also takes into account the realities of program start-up costs and funds needed to adequately plan, develop, deliver, and evaluate quality programs. The balance of the expenditures will be applied to program administration including staffing.

While this plan presents a three-year portfolio of investment consistent with SB 221 requirements, incentive levels and other program elements will be reviewed and modified on an annual basis to reflect changes in market conditions or implementation processes in order to maximize cost-effective savings. Modifications will be reported in the annual reports submitted to the PUCO.

As detailed in Table 5-1, AEP Ohio has developed this plan with the intent to meet statutory electric savings goals as percent of sales.

Table 5-1. Savings Goals and Investment Efficiency Programs – 2009 to 2011

Consumer Sector (Incremental annual net savings at meter)	2009	2010	2011	2009-2011 Total
Energy Savings (GWh) (1)	62.8	109.9	135.9	**308.7**
% Savings of Sector Sales	0.41%	0.70%	0.87%	**1.98%**
Demand Savings (MW) (1)	7.3	15.1	17.6	**40.0**
% Savings of Sector Sales	0.21%	0.43%	0.50%	**1.15%**
Total Cost (2009$ million) (2)	$9.9	$16.8	$20.4	**$47.1**

Residence Sector (Incremental annual net savings at meter)	2009	2010	2011	2009-2011 Total
Energy Savings (GWh) (1)	107.2	176.5	249.9	**533.6**
% Savings of Sector Sales	0.30%	0.50%	0.70%	**1.50%**
Demand Savings (MW) (1)	24.7	73.7	93.5	**161.4**
% Savings of Sector Sales	0.36%	1.07%	1.35%	**2.34%**
Total Cost (2009$ million)	$16.1	$25.5	$33.9	**$75.5**

Note: C&I Demand Response Program demand savings are not cumulative

Total (Incremental annual net savings at meter)	2009	2010	2011	2009-2011 Total
Energy Savings (GWh) (1)	170.0	286.4	385.8	**842.3**
% Savings of Sector Sales	0.33%	0.56%	0.75%	**1.65%**
Demand Savings (MW) (1)	32.0	88.8	111.1	**201.4**
% Savings of Total Sales	0.31%	0.86%	1.07%	**1.93%**
Total Cost (2009$ million)	$26.0	$42.3	$54.2	**$122.5**
Other Costs (2009$ million) (2)	$10.8	$11.5	$17.1	**$39.4**
Portfolio Total Investment (2009$)	$36.8	$53.8	$71.3	**$161.9**

(1) Savings are not projected for: Low Income Energy Conservation Kits, Behavior Modification, Self Direct Program, and Renewable Energy Technology Program. AEP Ohio will also conduct program evaluation and other essential program support functions, such as compliance and reporting, database management, contracting and payables and portfolio cost-benefit analysis. Some of the factors affecting the calculation of the baseline are pending subject to final PUCO order.

(2) Other Costs include support and other services, including: AEP Ohio EE/PDR Department, General Education/Training/Media, Low Income Energy Conservation Kits, Behavior Modification, Self Direct Program, Pilot Program Fund and Renewable Energy Program.

5.2 Benefit-Cost Analysis Background

AEP Ohio has estimated the energy savings, costs and net benefits associated with each of the programs included in the proposed portfolio of programs. The following section presents the benefit-cost results.

Types of Benefit-Cost Tests

As detailed in Table 5-2, there are five major benefit-cost tests commonly utilized in the energy efficiency industry, each of which addresses different perspectives. The PUCO established that the total resource costs test ("TRC") be used as the key perspective for judging the cost-effectiveness of the EE/PDR programs. Regardless of which perspective is used, benefit- cost ratios greater than or equal to 1.0 are considered beneficial. While various perspectives are often referred to as tests, the following list of criteria demonstrates that decisions on program development go beyond a pass/fail test.

Table 5-2. Comparative Benefit-Cost Tests

	PARTICIPANT TEST	RATE IMPACT MEASURE TEST	TOTAL RESOURCE COST TEST	PROGRAM ADMINISTRATOR COST TEST (Utility Test)	SOCIETAL TEST
BENEFITS:					
Reduction in Customer's Utility Bill	X				
Incentive Paid by Utility/Program Administrator	X				
Any Tax Credit Received	X		X		
Avoided Supply Costs		X	X	X	X
Avoided Participant Costs	X		X		X
Participant Payment to Utility (if any)		X		X	
External Benefits					X
COSTS:					
Utility Admin Costs		X	X	X	X
Participant Costs	X		X		X
Incentive Costs				X	
External Costs					X
Lost Revenues		X			

AEP Ohio evaluated the cost-effectiveness of the measures, programs and overall portfolio based on the following standard tests:

The Utility System Resource Cost Test ("UCT", also referred to as the Program Administrator Test) measures the net benefits of a EE/PDR program as a resource option based on the costs and benefits incurred by the utility (including incentive costs) and excluding any net costs incurred by the customer participating in the efficiency program. The benefits are the avoided supply costs of energy and demand, the reduction in transmission, distribution, generation and capacity valued at marginal costs for the periods when there is a load reduction. The costs are the program costs incurred by the utility, the incentives paid to the customers, and the increased supply costs for the periods in which load is increased.

The Total Resource Cost Test ("TRC") is a test that measures the total net resource expenditures of a EE/PDR program from the point of view of the utility and its ratepayers. Resource costs include changes in supply and participant costs. A EE/PDR program, which passes the TRC test (i.e., a ratio greater than 1.0) is viewed as beneficial to the utility and its customers because the savings in electric costs outweigh the EE/PDR costs incurred by the utility and its customers.

The Participant Cost Test ("PCT") illustrates the relative magnitude of net benefits that go to participants compared to net benefits achieved from other perspectives. While called a "participant" perspective, it is not necessarily a perspective indicating whether customers participate. The implied discount rate can vary substantially between customers. More importantly, many customers do not even know what a present- value benefit-cost analysis is let alone feel confident in making decisions based on it. Consequently, a simple payback (years) net of incentive has been shown to provide further guidance on customer participation. The benefits derived from this test reflect reductions in a customer's bill and energy costs plus any incentives received from the utility or third parties, and any tax credit. Savings are based on gross revenues. Costs are based on out-of-pocket expenses from participating in a program, plus any increases in the customer's utility bill(s).

The Rate Impact Measure ("RIM") Test measures the change in utility energy rates resulting from changes in revenues and operating costs. The higher the RIM test, the less impact is on increasing energy rates. While the RIM results provide a guide as to which technology has more impact on rates, generally it is not considered a pass/fail test. Instead, the amount of rate impact is usually considered at a policy level. The policy level decision is whether the entire portfolio's impact on rates is so detrimental that some net benefits have to be forgone.

5.3 Benefit-Cost Test Results

As detailed in Table 5-3, the 2009-2011 proposed AEP Ohio's EE/PDR portfolio of programs passes the total resource cost test with a ratio of 1.8.[12]

Table 5-3. Summary of Program Benefit-Cost Test Results – 2009 to 2011

Consumer Sector	Total Resource Cost Test (TRC)	Utility Cost Test (UCT)	Participant Cost Test (PCT)	Rate Impact Measure Test (RIM)
Products	2.2	3.2	6.3	0.5
Recycling	1.4	0.8	NA	0.3
Retrofit	1.3	2.0	3.9	0.5
Low Income	1.5	2.1	N/A	0.5
New Construction	1.3	2.0	2.6	0.7
Consumer Sector Total	**1.7**	**2.4**	**5.2**	**0.5**
Business Sector	**Total Resource Cost Test (TRC)**	**Utility Cost Test (UCT)**	**Participant Cost Test (PCT)**	**Rate Impact Measure Test (RIM)**
Prescriptive	2.1	3.3	3.4	0.7
Custom	1.1	2.2	2.5	0.5
New Construction	1.5	2.4	3.4	0.5
LED Traffic Signals	1.8	2.6	4.8	0.6
Demand Response	10.7	2.9	N/A	2.5
Business Sector Total	**1.8**	**2.8**	**3.1**	**0.7**
PORTFOLIO TOTAL	**1.8**	**2.7**	**3.6**	**0.6**

[12] The analysis conducted for this report largely was completed before the March 18, 2009 PUCO Order on AEP Ohio's Electric Security Plan.

5.4 Benefit-Cost Methodology

The Summit Blue DSM Resource Assessment Model ("DSM-RAM") is a model based on the integration of EE/PDR measure impacts and costs, utility customer characteristics, utility load forecasts, and utility avoided costs and rate schedules. The model utilizes a "bottom-up" approach in that the starting points are the study area building stocks and equipment saturation estimates, forecasts of building stock decay and new construction, EE/PDR technology data, past EE/PDR program accomplishments, and decision maker variables that help drive the market potential scenarios.

The baseline estimates of building stocks and equipment saturations came from the results of the on-site audits conducted by Summit Blue. DSM-RAM also used the electricity forecast, avoided cost forecast, and electricity prices as described in Chapter 5, above.

DSM-RAM estimates technical, economic, and achievable EE/PDR resource potential as defined below:

- **Technical EE/PDR potential** describes the amount of EE/PDR savings that could be achieved, not considering economic and market barriers, by customers installing EE/PDR measures. Technical potential is calculated as the product of the EE/PDR measures' savings per unit, the quantity of applicable equipment in each facility, the number of facilities in a utility's service area, and 100% – the measure's current market saturation. Technical potential estimates include EE/PDR measures that may not be cost effective, and technical potential does not consider market barriers, such as customer's lack of awareness of EE/PDR measures. Therefore, technical EE/PDR potential estimates do not provide a realistic basis for setting EE/PDR program goals.

- **Economic EE/PDR potential** describes the amount of technical EE/PDR potential that is "cost-effective," as defined by the results of the TRC test (or other preferred cost-effectiveness test). The program benefits for the TRC test include the avoided costs of generation, transmission, and distribution investments and avoided fuel costs due to the energy conserved by the EE/PDR programs. The costs for the TRC test are the EE/PDR measure costs, plus the EE/PDR program administration costs. The TRC test does not consider economic or market barriers to customers installing EE/PDR measures.

- **Achievable EE/PDR market potential** estimates the amount of EE/PDR potential that could be captured by realistic EE/PDR programs that include cost effective EE/PDR measures over the forecast period covered by this EE/PDR potential analysis. Achievable EE/PDR potential can vary with EE/PDR program parameters, such as the magnitude of rebates or incentives offered to customers for installing EE/PDR measures and, thus, many different scenarios can be modeled.

Within the achievable EE/PDR potential assessment, the individual measures are modeled by expected type of EE/PDR program design. Three different program design options are included in DSM-RAM.

- **Replace on Burnout ("ROB")** means that an EE/PDR measure is not implemented until the existing technology it is replacing fails. An example would be an energy efficient clothes washer being purchased after the failure of the existing clothes washer.

- **Retrofit ("RET")** means that the EE/PDR measure could be implemented immediately. For instance, installing a low flow showerhead is usually implemented before an existing shower head fails. Replacing incandescent lamps may be a ROB, but can be treated as a RET, because of the relatively short lifetime for incandescent bulbs.

- **New Construction ("New")** means measures that are installed at the time of new construction. Baseline technologies may be different in the new construction market, and implementation costs are often different due to the different technologies, either the energy efficient or base technology.

Cost Effectiveness Tests

DSM-RAM employs several financial tests, including the cost effectiveness tests described in Chapter 5: the TRC, PAC, participant, and RIM tests.

Simple Customer Payback

The decision model of DSM-RAM includes simple customer payback as part of its analysis. The calculation takes measure cost less the incentive received and divides it by first year energy bill savings.

EE/PDR Measure Levelized Cost/kWh

EE/PDR supply curves are based on the EE/PDR measure cost per kWh, levelized over the lifetime of the measure. It is calculated by multiplying EE/PDR measure costs by the Capital Recovery Factor ("CRF"), then dividing by the first year kWh savings.

Discount Rate

There is a time value of money because money spent in the future does not have the same value as money spent today. This time value is represented by a discount rate (analogous to an interest rate). Economic equations use the discount rate to convert all costs and benefits to a "present value" for comparing alternative costs and benefits. AEP Ohio used a uniform discount rate of 8.1% for both energy efficiency programs and supply side resources.

Avoided and Energy Costs

EE/PDR avoided cost benefits fall into two categories, avoided capacity benefits, and avoided energy costs. Avoided capacity benefits are the benefits derived from deferring the need to build new generating plants in the future. Avoided capacity values were based on AEP Ohio projections of future power plant costs considering expected level of capacity available over future years, and the costs of that capacity.

Administration, Implementation and Direct Costs

Each program's administration, implementation, and direct costs were allocated to the technologies delivered by the program in the ratio of the incentive investment to the total incentive investment for the program. The result is that individual technology benefit/cost ratios can appear low simply because administration or implementation costs have been allocated to the technology beyond the specific technology costs. On the one hand, this allocation helps ensure the overall cost-effectiveness of a program by guiding selection of technologies with sufficient benefits to support program delivery costs. This still allows technologies with a benefit-cost ratio less than 1.0 to be included as needed to meet other goals in addition to portfolio cost-effectiveness requirements. AEP Ohio support services that are not specific to individual programs are added as costs at the portfolio level for all programs.

Program Development

Program development involves the selection of technologies to include in a program, estimates of participation levels and estimates of program costs. It is obviously necessary for a portfolio of programs to be cost-effective. However, there are multiple and often contradictory perspectives on cost effectiveness. Alternative perspectives are described below. The primary cost-effectiveness perspective in AEP Ohio is the total resource cost test perspective. Fortunately, it is possible to achieve required cost-effectiveness at a portfolio level while also considering other important criteria. The following list of criteria was considered in developing programs:

- Achieving more benefits net of cost is a higher priority than a high benefit-cost ratio
- The portfolio must provide opportunities for specific customer sectors to participate
- Long term contribution of a technology is important to program success and to future cost reductions
- Consideration of different benefit-cost perspectives is necessary

While almost all customer sectors will pay a contribution in their utility bill towards the cost of efficiency programs, some customer sectors will not be able to participate unless a program is specifically targeted to overcome their barriers. The Residential Low-Income Program is an example of a program where the ability of a specific sector to participate was a primary program design goal.

6 CONSUMER PROGRAM PLANS

6.1 Efficient Products

AEP Ohio: Efficient Products Program

Objective

Produce long-term electric energy savings in the consumer sector by increasing the market share of high-efficiency lighting products, home appliances sold through retail sales channels, and promoting the purchase and installation of HVAC and domestic hot water heating equipment.

Target Market

Lighting: Residential customers purchasing lamps and fixtures through retail sales channels. Residential rental property owners and customers living in rental properties are also eligible to purchase efficient lighting products, as well as small commercial customers.

Appliances: Customers in the market for new refrigerators and freezers. Residential rental property owners are also eligible.

As new technology and/or proven program design options (such as lift-based incentive) become available, the program may target the purchase of other high-efficiency appliances and/or consumer electronics. At this time however, options are limited to the aforementioned products due to economic considerations (in other words, baseline market share is already high or the difference in consumption between the baseline and "high efficiency" does not warrant attention by the program).

HVAC and Domestic Hot Water: Customers installing new or replacing air source heat pumps in single-family homes and multifamily dwellings of three units or less will be eligible for incentives. Residential customers installing new water heating equipment are eligible, both in the replacement market (through plumbing contractors as well as the Do-It-Yourself retail channel) and the new construction market (through contractors).

Program Duration

The Efficient Products Program will be an ongoing element of the program portfolio.

Program Description

Lighting: The Efficient Products Program will provide incentives and marketing support through retailers to build market share and usage of ENERGY STAR® lighting products. The program targets the purchase of lighting products through in-store promotion as well as special sales events. Customer incentives facilitate the increased purchase of high-efficiency products while in-store signage, sales associate training and support makes provider participation easier. The program will also provide convenient recycling for CFLs at local retailers.

Appliances: The program will use a retail channel-based strategy to influence the purchase of high efficiency appliances and electronics. Since appliance standards and the market share of high-efficiency appliances are gradually increasing, qualifying models will be specified and marketing will be targeted. The program will initially provide incentives to customers encouraging purchasing high-efficiency refrigerators and freezer. In future years, the program may target other cost-effective options for high-efficiency appliances

and electronics.

HVAC and Domestic Hot Water: The program will affect the purchase and installation of air source heat pumps and electric hot water heaters through a combination of market push and pull strategies that stimulate demand while simultaneously increasing market provider investment in stocking and promoting high efficiency products. The program will work through two distinct market channels – plumbing contractors and the retail Do-It-Yourself stores.

Incentive Strategy

Several incentive strategies will be employed to address current market conditions.

LIGHTING

CFL Markdowns: The markdown approach will be the primary driver of volume within the lighting program. With a markdown approach, AEP Ohio agrees to reimburse select retailers for discounting the cost of CFLs or other products by a specified dollar amount per unit during special limited term promotions. Qualifying product is listed at a lower retail price on store shelves, or marked down automatically at the register. At the end of every month, the retailer provides a point of sale report and is reimbursed for the discount provided on each unit that they sold. This strategy eliminates costs associated with mail-in rebate fulfillment, printing claim forms and setting up store locations, and is very cost-effective if AEP Ohio can capitalize on economies of scale by coordinating promotions with neighboring utilities. Volume is controlled by allocating a specific number of CFLs that each retailer may discount, in advance of the promotion, and by offering discounts on a "while supplies last" basis.

Markdown promotions should be arranged with retailers ideally six months in advance to accommodate their marketing plans and allow sufficient time to procure product. AEP Ohio dollars may be leveraged through a request for proposal ("RFP") process to gain retailer and manufacturer contributions of financial and logistical support for promotions. For example, retailers may be asked to bid on access to AEP Ohio markdown dollars based on how much they are willing to further reduce prices below normal retail rates, or manufacturer offers to dispatch field representative to stores to stock shelves and train sales associates. Retailers must provide shipping documentation showing that the store received a specified number of units and monthly point of sale report showing the number of units sold. Additionally, use of coupons will provide AEP with customer participation data and ensure that only AEP Ohio customers participate in the promotion.

Lighting Fixture and Ceiling Fan Markdowns: Similar to the CFL markdown model, the program will work with retailers to provide a discount on select ENERGY STAR products at the point of sale.

LED Holiday Lights Markdown: Similar to the CFL, fixture, and fan markdown promotion, the program will work with retailers to provide a discount on select products at the point of sale.

CFL Coupons: This incentive strategy would provide instant-rebate coupons on ENERGY STAR qualified CFLs at participating retailers who are unable to provide point of sale data in conjunction with markdown style promotions. A quantity restriction of twelve (12) CFLs per residential customer per year will be imposed to help maximize installation rates and a limit of 24 CFLs per commercial customer per year. Customers desiring more than the specified limit will be encouraged to call the program, explain their circumstance, and seek permission. Special bonus incentives may be offered for the purchase of CFL multipacks (such as 4-pack, 6-pack).

Lighting Fixture and Ceiling Fan Coupons: Customers can utilize instant rebate coupons available from retailers who are unable to provide point of sale data in conjunction with markdown promotions.

LED Holiday Lights Coupons: Instant rebate coupons will be available in stores that may be used to claim cash-back incentives from retailers who are unable to accommodate the requirements of markdown style promotions. This incentive strategy would only be available during the holiday season each year and should be considered a public relations activity as this product will not generate significant energy savings.

Pilot Program with Lighting Showrooms: Program field representatives will work with several lighting showrooms by providing training support and a salesperson "spiff" to promote the sale and installation of ENERGY STAR fixtures.

Lift-based Incentive: Although the incentive strategies outlined herein assume a transfer payment to the retailer or customer based on a dollar amount per every unit purchased, AEP Ohio may consider moving to a lift-based incentive strategy in future years. With a lift based incentive strategy AEP Ohio works with retailers to establish baseline market share for eligible products and negotiates an incentive for every unit sold above the baseline. The objective is to maximize the net to gross (savings) ratio by providing a greater incentive for the retailer to increase the share of targeted products they sell each year as those below the baseline may be considered largely free-riders. This approach is being tested by other utilities and implementation contractors in the country. AEP Ohio may want to follow the results of these pilots and revisit this incentive strategy within 1-2 years depending on the results of pilot efforts.

HVAC AND DOMESTIC HOT WATER

HVAC contractors will be able to apply the appropriate incentive to the customer invoice and submit to AEP Ohio for reimbursement or the customer may submit a mail-in incentive application. In addition, the incentive design may employ a smaller additional incentive (e.g. $25 to $50/unit) directly to the HVAC contractor to further elicit program participation if necessary.

Mail-in incentive applications will be available at point-of-sale in retail stores that sell qualifying water heaters for the Do-It-Yourself market. Plumbing contractors will be able to apply the appropriate incentive to the customer invoice and submit to AEP Ohio for reimbursement or the customer may submit a mail-in incentive application.

A $50 incentive will be paid to retailers or contractors who apply the incentive to the customer's invoice. This incentive will serve as additional motivation for market providers to stock eligible products and to further reduce the first cost burden on the customer. The incentive will be paid to the vendor (either the contractor or retailer) not the salesperson, which is necessary to avoid time-consuming efforts to secure market provider agreement to offer incentives to salespeople. The vendor may choose to pass the incentive on to their salespeople.

Eligible Measures

The measures listed below have been specified for planning purposes. AEP Ohio will revise eligible measures as needed in accordance with current market conditions, technology development, EM&V results, and program implementation experience. Within the program period of this plan, it is likely that LED lamps technology will continue to improve and become more cost-effective, as replacement for incandescent or CFL, and promoted in the future. Currently, it is premature to forecast a start date.

Note that the CFL incentive amount listed below is an average. Incentive amounts offered

in conjunction with markdown promotions may vary based on agreements negotiated with retailers.

Measures addressed will include:

- CFL Lamp (average values including Specialty CFLs)
- CFL Fixture
- Ceiling Fan with CFL Lamp Kit
- LED Holiday Lights
- Refrigerator
- Freezer
- Electric Hot Water Heater
- Central and Room Air Conditioners
- Air Source Heat Pump

Implementation Strategy

Lighting - Key Elements

Retailer/manufacturer recruitment for markdown component: AEP Ohio's implementation contractor will issue an RFP to solicit retailer/manufacturer participation for the markdown component of the program. The RFP will specify program requirements such as product specifications, performance criteria, product stocking objectives, data sharing requirements, and the option of participating in the lamp-recycling component of the program. In addition, it will provide the points on which retailers and their manufacturer partners may compete for access to the programs including financial and logistical support.

It is important to note that markdown promotions may be arranged with "big box" retailers through central corporate offices while retailers with franchise based business models (such as Ace Hardware and True Value, etc.) may require the additional step of contacting individual store locations to secure their participation. In the case of franchise retailers, AEP Ohio may work through corporate offices to make product available and to communicate the availability of the program to individual stores, but independently owned and operated stores often need additional contact to ensure follow through.

Retailer recruitment, education and outreach: AEP Ohio implementation contractor will utilize field representatives to recruit retailers for participation in both the instant rebate and markdown components of the program as well as special turn-in events and pilot projects. Field representatives will maintain regular contact with participating retailers to ensure the following:

(1) Retail sales staff are informed about the program offering, incentive process, and benefits of qualifying products

(2) Retailers have an adequate supply of program marketing materials and coupons

(3) Point-of-purchase displays are visible and qualifying products are stocked in accordance with retailer commitments

(4) Point-of-purchase materials are refurbished in the event that it is removed prior to the end of the promotion date

(5) Retailers concerns and issues are addressed promptly

(6) Retailers are informed well in advance of planned promotional activities and cooperative advertising opportunities

Incentive processing: AEP Ohio's implementation contractor will manage prompt processing of retailer/customer incentive payments. As prompt incentive payment is essential to retailer/customer satisfaction, the implementation contractor will establish protocols that expedite payment.

CFL lamp recycling: AEP Ohio's implementation contractor will deploy recycling bins for CFL lamp collection at participating retailers. These bins may be purchased in conjunction with a turnkey service that allows the retailer to mail a full bin to the recycling company and receive an empty bin in return. Retailers will be given training on proper sealing, labeling, and transportation for the bins.

Implementation-related administrative requirements will be handled by a third-party implementation contractor, selected through a competitive bid process. The implementation contractor will be responsible for:

- Retailer/manufacturer recruitment, negotiation, and support
- Field services
- Marketing strategy
- Recommending content for marketing materials and advertising
- Management of lamp recycling
- Incentive processing
- Data tracking and reporting
- Budget tracking and reporting
- Contact (call) center services
- Customer satisfaction/Problem resolution
- Measurement and verification

Appliances - Key Elements

Retailer recruitment, education and outreach. AEP Ohio's implementation contractor will utilize field representatives to facilitate the recruitment of participating retailers. The field representatives will maintain regular contact with participating retailers to ensure the following:

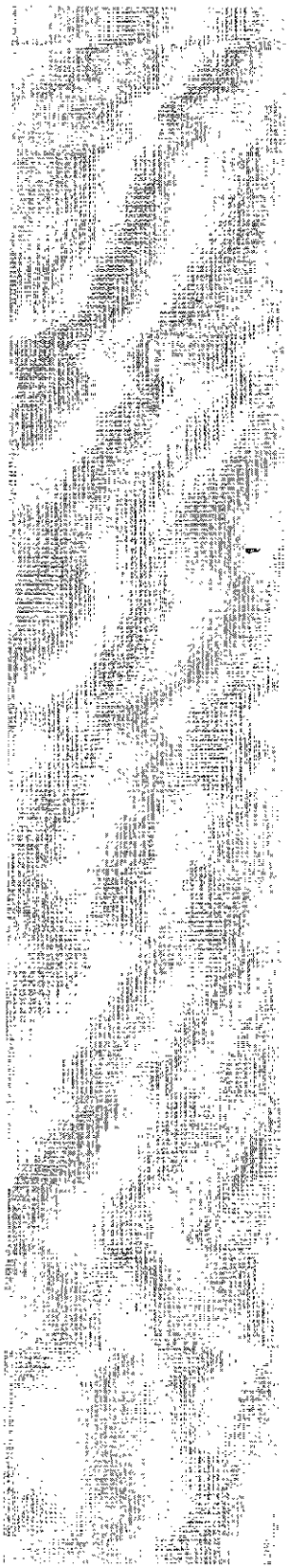
(1) Retail sales staff are informed about the program offerings, incentive application process, and benefits of ENERGY STAR qualifying products

(2) Sufficient host retailer(s) are recruited for the special turn-in events to meet the program's unit goal. Depending on the level of interest among retailers, it is expected that events would be scheduled with 5-10 retailers in various locations throughout the service territory

(3) Retailers have an adequate supply of program marketing materials and application forms

(4) Recycling services are provided to retailers and meet their needs

(5) Point-of-purchase displays are visible and qualifying products are stocked in



accordance with retailer commitments

(6) Retailers concerns and issues are addressed promptly

(7) Retailers are informed well in advance of planned promotional activities and cooperative advertising opportunities

(8) Field representatives visit participating retailers throughout the promotion timeline

Incentive coordination and processing: AEP Ohio's implementation contractor will coordinate the delivery of rebate coupons and materials to participating retailers and will manage prompt processing of incentive payments. As prompt incentive payment is essential to retailer/customer satisfaction, the implementation contractor will establish processes and procedures that expedite payment.

Appliance turn-in and recycling: AEP Ohio's implementation contractor will work with all host retailer(s) to coordinate the logistics of the turn-in component of the promotion. The contractor will also coordinate the collection, transportation and recycling of turned-in units through a private recycling firm.

Coordination with the Appliance Recycling Program. AEP Ohio's implementation contractor will coordinate all activity with this program's recycling contractor so that customers are aware that they can also have their older dehumidifiers/room air conditioners picked up at their home if they have already scheduled an appointment for removal of a refrigerator/freezer.

Strategies to limit free ridership and promote spillover include educational messages in retail stores raise awareness of energy consumption on older appliances and encourage consideration of early replacement.

AEP Ohio will manage the development and placement of marketing materials for distribution by the implementation contractor.

HVAC and Domestic Hot Water - Key Elements

Contractor recruitment, education and outreach. AEP Ohio's implementation contractor will utilize field representatives to facilitate the recruitment of HVAC and plumbing contractors and retail Do-It-Yourself stores to participate in the program. The field representative will maintain regular contact with participating contractors to ensure the following:

(1) All contractors/stores are informed about the program offering and incentive application process

(2) Contractors/stores have an adequate supply of program marketing materials and application forms

(3) Qualifying equipment is readily stocked

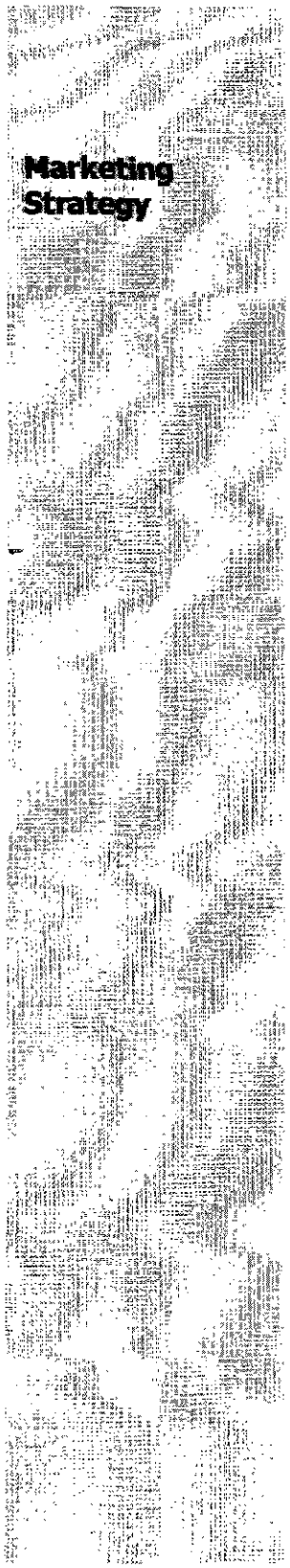
(4) Contractors'/stores' concerns and issues are addressed promptly

(5) Contractors/stores are informed of cooperative advertising opportunities

Application processing: AEP Ohio's implementation contractor will coordinate processing of all incentive applications, verification of eligibility and prompt delivery of incentive checks to contractors/customers.

Strategies to limit free ridership and promote spillover include:

- Incentives only for high-efficiency equipment



- Incentives set high enough to encourage purchases that wouldn't have happened without the incentive
- Incentive claims must be submitted within 60 days of purchase

Marketing activities related to the development and placement of collateral materials, advertising, media outreach, and public relations will be managed by implementation contractor with direct input and approval from AEP Ohio staff.

Lighting - Key Elements

- Point-of-purchase displays
- Cooperative advertising with retailers
- Direct consumer marketing through AEP Ohio's website and newsletter
- Mass-market advertising through bill inserts, radio, newspaper, and/or television

The program will be marketed in-store through displays, signage, and other materials that will be developed in cooperation with participating retailers. Materials will employ a strong consumer education component emphasizing the benefits of high-efficiency lighting products (e.g. lifetime dollar savings, energy savings, longer life, safety, appropriate light quality, etc.). Marketing materials will leverage the ENERGY STAR Brand, which enjoys a high level of consumer recognition and favorable associations.

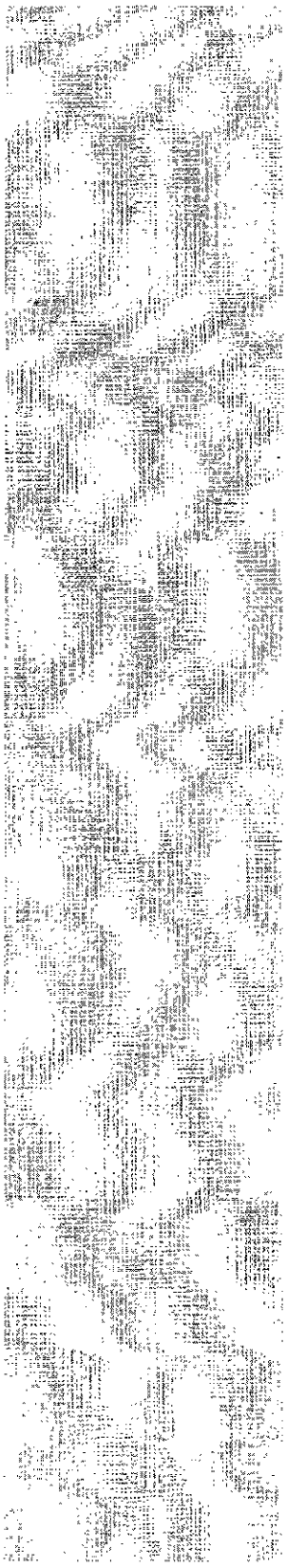
Cooperative advertising support (e.g. AEP Ohio pays 50% of the cost of advertising space dedicated to the program) will be offered to retailers as an incentive for them to promote the program. This is an important strategy as retailers best know their customers and cost-effective means of communicating with them. Terms for participation will require that advertisements include key product features and benefits and clearly communicate AEP Ohio's sponsorship of cash-back incentives through specified language and/or the use of AEP Ohio's logo. Cooperative advertising terms and conditions will also require pre-approval by the implementation contractor or AEP Ohio to ensure advertisements are consistent with the intent of the program and to ensure AEP Ohio's Brand integrity.

AEP Ohio will post information about the ongoing mail-in rebate offers and markdown promotions on AEP Ohio's website and in its newsletter. Advertising and other promotional activities will refer customers to the webpage or toll free number for more information on incentive offers, participating retailers, and product information.

Bill inserts and mass media advertising developed and placed by AEP Ohio will support spring and fall markdown campaigns, with the bulk of volume and therefore advertising targeted to the fall timeframe. Bill inserts and mass media advertising (such as radio, print, and/or television) will be employed to promote the availability of AEP Ohio-sponsored discounts at participating retail locations. Because it will be necessary to target stores within AEP Ohio's service territory to minimize the participation of ineligible customers, messaging will indicate discounts are available from participating retailers and refer customers to a toll free number or the program webpage for a list of participating store locations. In addition to promoting the availability of financial incentives, advertising will promote the key features and benefits of targeted products, focusing primarily on CFLs.

Appliances - Key Elements

- Annual mailing of packets including incentive claim forms and other collateral materials to retailers



- Direct consumer marketing through AEP Ohio's website and newsletter bill insert
- Press releases
- In-store point-of-purchase displays
- Cooperative advertising with retailers
- Outside banners for turn-in events

All marketing materials will carry a strong consumer education message emphasizing the benefits of high efficiency appliances and early replacement with ENERGY STAR qualified models (lifetime dollar savings, energy savings, water savings, lower noise, etc.). Marketing materials will leverage the ENERGY STAR brand, which enjoys a high level of consumer recognition and favorable associations.

HVAC - Key Elements

- Annual mailing of packets including incentive claim forms and other collateral materials to HVAC contractors
- Incentive applications and program information available on-line
- Distribution of collateral materials to HVAC contractors through field representatives
- Direct consumer marketing through AEP Ohio's website and newsletter bill insert
- Press releases
- Mass media advertising

HVAC equipment will be primarily marketed through local contractors, the most direct influencers of customer purchase decisions. Contractors will receive educational materials to share with their customers through an initial mailing campaign, kick-off meetings, and in-person visits by trade allies. Further, the program will employ a top down communication strategy involving the recruitment of HVAC equipment manufacturer and distributor representatives to support the program by passing information on to the contractors they serve.

The website will contain all necessary information about the program and incentive offers. Mass media advertising (such as print, radio, and television) will promote the availability of incentive offers along with the benefits associated with targeted products.

Domestic Hot Water - Key Elements

- Annual mailing of packets including incentive claim forms and other collateral materials to retailers and plumbing contractors
- Distribution of collateral materials to retailers and contractors through field representatives
- Direct consumer marketing through AEP Ohio's website and newsletter bill insert
- Press releases
- Mass media advertising

High efficiency water heating equipment will be marketed through two market channels: plumbing contractors and retail Do-It-Yourself stores. Contractors and retailers will receive educational materials to share with their customers.

The website will contain all necessary information about the program as well as a list of participating contractors. Press releases and mass media advertising will promote the availability of consumers incentives along with key benefits associated with targeted products.

Milestones

LIGHTING

Tasks	Timeline
Selection of Program Implementation Contractor.	2 months
Complete negotiations with retailer partners for fall markdown campaign	2 ½ months
Develop and distribute instant rebate coupon materials for ongoing use	3 months
Recruit and secure product orders from independent retailers for fall campaign	3 months
Issue RFP to select retailer partners for winter LED holiday light campaign	3 months
Complete negotiations with retailer partners for holiday light campaign	4 months
Complete development of marketing materials and advertising for fall campaign	4 months
Distribution of marketing materials to retailers for fall campaign	5 months
Kick-off fall campaign; run on while-supplies- last basis	5 months
Issue RFP to select retailer partners for spring markdown campaign	5 months
LED holiday lighting campaign kick-off	7 months
Complete negotiations with retailers for spring campaign	8 months
Recruit and secure product orders from independent retailers for fall campaign	9 months
Distribution of marketing materials to retailers for spring campaign	10 months
Kick-off spring campaign	11 months

APPLIANCES

Tasks	Timeline
Selection of Program Implementation Contractor	2 months
Program planning and materials	4 months
Program launch – distribute materials to retailers	5 months

HVAC

Tasks	Timeline

Selection of Program Implementation Contractor	2 months
Program planning and materials	4 months
Initial mailing of program materials to contractors	5 months
Telephone calls to targeted contractors to ensure they receive materials and to answer questions	5 ½ months
In person outreach to contractors begins	5 ½ months

DOMESTIC HOT WATER

Tasks	Timeline
Selection of Program Implementation Contractor	1 months
Program planning and materials	4 months
Initial mailing of materials to retailers and contractors	5 months
Follow-up telephone calls to contractors and retailers	5 ½ months
In person visits to retailers and contractors begins	5 ½ months

EM&V Strategy

All evaluation activities will be conducted by a third-party contractor selected through a competitive bidding process. An integrated evaluation approach will be taken which includes: addressing evaluation at the onset of program design, collecting evaluation data as part of program administration, assessing and documenting baseline conditions, establishing tracking metrics, developing and refining deemed savings measure databases, as well as, conducting primary and secondary research as part of impact and process evaluations.

The **process evaluation** will be conducted during the first program year and then coordinated with follow-on impact evaluation work to be performed once program-approved measures have been installed and operating for a sufficient time to enable a robust impact evaluation.

Self-report surveys with both participants and nonparticipants will be used to assess free riders/spillover as well as program delivery issues such ease of purchase and satisfaction of the products under normal use conditions. These surveys will be enhanced by collecting market data and assessing trends. Interviews with program mangers, the implementation contractor and trade allies such as retailers will be conducted to assess the operational conditions of the program and to identify ways to improve the program. These surveys will be enhanced by collecting market data and assessing trends.

Impact Evaluation

Lighting: The overall goal of the impact evaluation will be to validate/calibrate the deemed savings values, verify installation and determine program cost-effectiveness. Primary impact metrics are savings per unit, program participants, net-to-gross ratio and program cost-effectiveness. Deemed savings will be determined by a literature and data review, analysis of program records and conducting a light logger study with a selected sample of participants. Primary research to assess the impact of variables such as baseline lamp conditions, CFL use and storage conditions, and location will also be conducted.

Appliances: The overall goal of the impact evaluation will be to validate/calibrate the

deemed savings values, verify installation and determine program cost-effectiveness. Primary impact metrics are savings per unit, program participants, net-to-gross ratio and program cost-effectiveness. Deemed savings will be determined by a literature and data review, analysis of program records and conducting research and analysis of a sample of appliances turned in for recycling.

HVAC: The overall goal of the impact evaluation will be to assess the degree of change in sales of more efficient HVAC equipment above what would have occurred in the market without the program, validate/calibrate the deemed savings values, and determine program cost-effectiveness. Primary impact metrics are increase in sales/penetration of more efficient HVAC equipment, savings per unit, program participants, net-to-gross ratio and program cost-effectiveness.

A market practice baseline study of sales of higher efficiency HVAC equipment will be conducted and changes in sales of equipment will be tracked by regular interviews with contractors. Estimates of deemed savings will be assessed through a literature and data review and field research of a sample of participants.

Water Heating: The overall goal of the impact evaluation will be to assess the energy savings for each type of water heating system and determine program cost-effectiveness. Primary impact metrics are savings per efficient system, program participants, net-to-gross ratio and program cost-effectiveness. Field research of a sample of participants and non-participants will be conducted to determine the impact of variables such as age and size of equipment replaced, income levels, and number of members of the household. This information will be input to an econometric/billing analysis of a sample of participants and non-participants to determine energy savings for the different types of water heating systems.

AEP Ohio Administrative Requirements

- AEP Ohio will be responsible for general administrative oversight of the program portfolio. It is estimated that a 0.75 full-time equivalent ("FTE") will be required for program oversight. Key oversight functions include:
- Recruitment, selection, and management of the implementation contractor(s)
- Coordination of marketing strategy/public relations among programs and market sectors
- Development and placement of marketing materials with input from the implementation contractor.
- Coordination of all educational services
- Data warehousing
- Recruitment, selection, and management of the evaluation contractor
- Goal achievement within budget

Participation

Annual Participants (units installed)				
Measure	2009	2010	2011	Total 2009 – 2011
9-16W Screw-in CFL Lamp	971,058	1,622,339	1,883,580	4,476,976
17-24W Screw-in CFL Lamp	199,574	356,584	438,466	994,624
25-34W Screw-in CFL Lamp	101,320	169,352	196,480	467,153
Over 34W Screw-in CFL Lamp	73,332	113,322	121,685	308,339
9-16W Screw-in CFL – Outdoor Lamp	12,819	20,009	21,748	54,575
17-24W Screw-in CFL – Outdoor Lamp	6,005	10,714	13,339	30,058
25-34W Screw-in CFL – Outdoor Lamp	13,800	23,561	27,962	65,323
Over 34W Screw-in CFL – Outdoor Lamp	986	1,621	1,859	4,466
Total	**1,378,893**	**2,317,503**	**2,705,119**	**6,401,514**

Annual Participants (units installed)				
Measure	2009	2010	2011	Total 2009 – 2011
Variable Speed Drive Pool Pumps	113	357	784	**1,254**
High Efficiency Water Heating Tank	4,776	6,507	8,120	**19,404**
Faucet Aerators	2,044	2,748	3,366	**8,159**

Room A/C - Energy Star	330	428	494	1,253
Energy Star Air Source Heat Pump (ton)	596	863	1163	2,622

Incremental Annual Participant Costs (2009$)			
2009	2010	2011	Total 2009 - 2011
$1,521,531	$2,538,306	$3,042,130	$7,101,968

Budget

Incremental Annual Budget (2009$) – Total

2009	2010	2011	Total 2009 – 2011
$3,441,732	$5,616,033	$6,434,867	$15,492,632

Incremental Annual Budget (2009$) – Incentive

2009	2010	2011	Total 2009 – 2011
$1,644,855	$2,772,627	$3,166,725	$7,584,207

Incremental Annual Budget (2009$) – Administrative

2009	2010	2011	Total 2009 – 2011
$1,796,877	$2,843,406	$3,268,142	$7,908,424

Savings Targets

Incremental Annual Energy Savings (Net MWh) – at Meter

2009	2010	2011	Cumulative Total 2009 – 2011
40,838	70,759	83,766	195,364

Incremental Annual Summer Peak Demand Savings (Net MW) – at Meter

2009	2010	2011	Cumulative Total 2009 – 2011
4,702	8,270	9,865	22,837

Benefit-Cost Test Results

Benefit-Cost Test	2009-2011 Benefit-Cost Test Ratio
Total Resource Cost (TRC)	2.2
Utility System Resource Cost (UCT)	3.2
Participant Cost (PCT)	6.3
Rate Impact Measure (RIM)	0.5

6.1.1 Appliance Recycling

AEP Ohio: Appliance Recycling Program

Objective

Produce long-term electric energy savings in the consumer sector by permanently removing operable second refrigerators and freezers from the power grid and recycling them in an environmentally safe manner.

Target Market

Residential or small commercial customers who are currently operating second refrigerators and/or freezers.

Program Duration

The Refrigerator/Freezer Turn-In Program will be an ongoing element of the program portfolio.

Program Description

The average household replaces a refrigerator every ten years. However, many of the refrigerators being replaced are still functioning, so they often become backup appliances – energy guzzlers in basements and garages – or sold in a used-market. The Turn-In Program will be established to target those "second" refrigerators and freezers, providing the dual benefit of cutting energy consumption and keeping the appliances out of the used-market. Research results from impact evaluations on five refrigerator recycling programs indicate significant savings potential for this program. An appliance-recycling contractor provides turn-key implementation services that include verification of customer eligibility, scheduling of pick-up, appointments, appliance pick-up, complete decommissioning and recycling services.

Incentive Strategy

The customer will be offered free pick up and recycling of their old operable second refrigerators and freezers. Typically the customer would pay a municipal fee for appropriate disposal of the unit so the free service provides an additional value to the customer of approximately $35. In addition, the customer will be offered a cash incentive of $25 to further motivate the turn-in of operable units.

Eligible Measures

The measures listed below have been specified for planning purposes. AEP Ohio will revise eligible measures as needed in accordance with current market conditions, technology development, EM&V results, and program implementation experience.

Deemed savings values were based on documented values from several independent evaluations conducted from California utility recycling programs stemming as far back as 10 years.

- Operating second refrigerator
- Operating second freezer

Implementation Strategy

Key elements of the implementation strategy include:

- **Turn-key appliance pick-up/recycling:** AEP Ohio will select an implementation contractor to provide comprehensive, turn-key implementation services from eligibility verification and scheduling of pick-ups to proper disposal and recycling of turned-in appliances.

- **Incentive coordination and processing:** AEP Ohio's implementation contractor will coordinate prompt processing of incentive payments. As prompt incentive payment is essential to retailer/customer satisfaction, the implementation contractor will establish protocols and service level requirements that expedite payment.

To minimize free-ridership, the program will use marketing messages targeted at consumers with "second" refrigerators and freezers. Mass marketing emphasizing the cost of operating second refrigerators/freezers also has the potential to increase spillover impacts. The program will not be marketed at retail point-of-sale, thus avoiding the situation where retailers are only promoting the service as convenient disposal for an appliance they are replacing regardless of the program.

Implementation-related administrative requirements will be handled by a third-party implementation contractor, selected through a competitive bid process. The implementation contractor will be responsible for:

- Management of the scheduling, pick-up, and appliance recycling processes
- Ensuring that all components of the units are recycling, including CFC R-11, oils, coolants, glass, plastic and metals
- Marketing strategy and messaging
- Incentive processing
- Data tracking and reporting
- Budget tracking and reporting
- Contact (call) center services
- Managing public relations
- Customer satisfaction/Problem resolution

Marketing Strategy

AEP Ohio will manage the development and placement of promotional materials, advertising, and public relations activities.

All marketing materials will carry a strong consumer education message emphasizing the cost of operating "second" refrigerators and freezers and older, inefficient appliances, the benefits of early replacement with ENERGY STAR qualified models, and the importance of proper disposal and recycling of older units. Marketing materials will leverage the ENERGY STAR brand, which enjoys a high level of consumer recognition and favorable associations.

Key elements of the marketing strategy include:

- Direct consumer marketing through AEP Ohio's website and bill insert newsletter.
- Website links to EPA's new "ENERGY STAR Recycle My Old Fridge Campaign" at www.recyclemyoldfridge.com. Includes calculators to estimate savings.
- Press releases.

Mass media advertising including print, radio, and/or television.

Milestones

Tasks	Timeframe
Selection of Program Implementation Contractor	1 month
Program materials and advertising developed and placed	3 months
Program launch – marketing begins	3 months
First Appliance Pick-Up	5 months

EM&V Strategy

All evaluation activities will be conducted by a third-party contractor selected through a competitive bidding process. An integrated evaluation approach will be taken which includes: addressing evaluation at the onset of program design, collecting evaluation data as part of program administration, assessing and documenting baseline conditions, establishing tracking metrics, developing and refining deemed savings measure databases, as well as, conducting primary and secondary research as part of impact and process evaluations.

The overall goal of the **impact evaluation** will be to validate/calibrate the deemed savings values and determine program cost-effectiveness. Primary impact metrics are savings per unit, program participants, net-to-gross ratio and program cost-effectiveness. Deemed savings for refrigerators and freezers will be determined by a literature and data review, analysis of program records and testing a sample of equipment picked up for recycling. Primary research may be conducted to determine the impact of variables such as size of refrigerator, effective life of the equipment, and owner utilization. Self-report surveys with both participants and nonparticipants will be used to assess free riders/spillover, program awareness, barriers to participation, participant satisfaction, and other process efficiency issues. Interviews with also be conducted with program managers and implementation contractors. These surveys will be enhanced by collecting market data and assessing trends.

The **process evaluation** will be conducted during the first program year and then coordinated with follow-on impact evaluation work to be performed once program-approved measures have been installed and operating for a sufficient time to enable a robust impact evaluation.

AEP Ohio Administrative Requirements

AEP Ohio will be responsible for general administrative oversight of the program portfolio, which will require approximately 0.25 FTE, to address the following:

- Recruitment, selection, and management of the implementation contractor(s)
- Coordination of marketing strategy/public relations among programs and market sectors
- Development and placement of marketing materials and advertising
- Data warehousing
- Recruitment, selection, and management of the evaluation contractor
- Goal achievement within budget

Participation

Incremental Annual Participants (units installed)				
Measure	2009	2010	2011	Total 2009 – 2011
Refrigerator, retire old	3,568	6,399	10,924	20,909

Incremental Annual Participant Costs (2009$)			
2009	2010	2011	Total 2009 – 2011
$0	$0	$0	$0

Budget

Incremental Annual Budget ($000s) – Total			
2009	2010	2011	Total 2009 – 2011
$1,193,527	$2,028,309	$3,462,740	$6,684,577

Incremental Annual Budget ($000s) – Incentives			
2009	2010	2011	Total 2009 – 2011
$568,346	$1,014,155	$1,731,370	$3,313,871

Incremental Annual Budget ($000s) – Administrative			
2009	2010	2011	Total 2009 – 2011
$625,181	$1,014,155	$1,731,370	$3,370,706

Savings Targets

Incremental Annual Energy Savings (Net MWh) – at Meter			
2009	2010	2011	Cumulative Total 2009 – 2011
4,665	8,324	14,211	27,200

Incremental Annual Summer Peak Demand Savings (Net kW) – at Meter			
2009	2010	2011	Cumulative Total 2009 – 2011
563	1,004	1,714	3,280

Benefit-Cost Test Results

Benefit-Cost Test	2009-2011 Benefit-Cost Test Ratio
Total Resource Cost (TRC)	1.4
Utility System Resource Cost (UCT)	0.8
Participant Cost (PCT)	N/A
Rate Impact Measure (RIM)	0.3

6.1.2 Home Retrofit

AEP Ohio: Existing Home Retrofit Program

Objective

Produce long-term electric energy savings in the consumer sector by helping customers analyze their energy use and recommending appropriate weatherization measures and the installation of high-efficiency lighting, appliances, and other equipment.

Target Market

Residential customers in existing single family homes and duplexes. The program targets promotion to customers with both above average consumption and mean household income to maximize savings impacts and the percentage of customers who implement improvements.

Program Duration

Components of the Home Retrofit Program will be phased in over three years in order to allow time for the development of contractor infrastructure sufficient to meet the program goals.

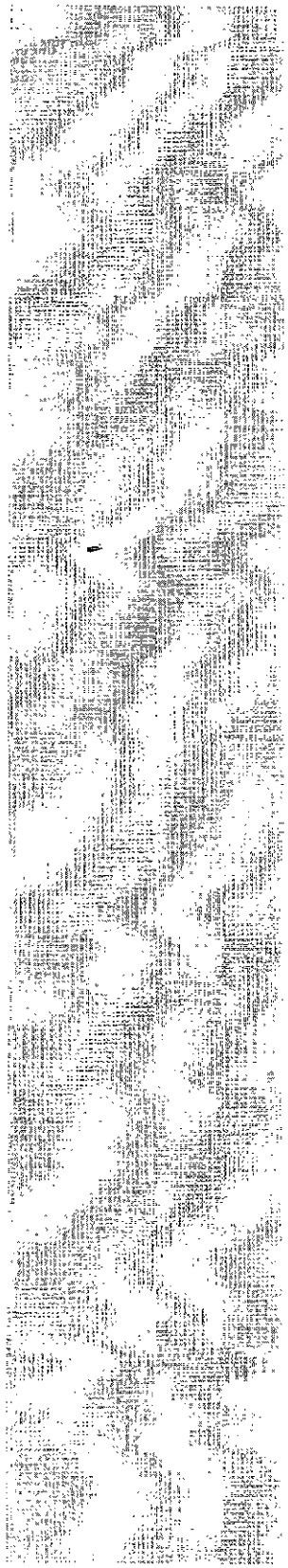
Program Description

The Home Retrofit Program will utilize a three-phase approach to capture savings in the single-family existing homes market.

Phase 1: On-Line Energy Analysis. AEP Ohio will be invited to participate in an on-line energy analysis, the product of which is a report that explains how their electric bill is calculated, how their energy costs compare to other homes in the area, and disaggregates the various uses for electricity in their home to help them understand how they are using it. In addition, the report provides a prioritized list of recommended energy efficiency improvements that may reduce the customer's energy consumption. Armed with this information, consumers are better equipped to make informed decisions in managing their consumption, and identifying and prioritizing improvements.

A low-cost energy efficiency kit similar to the energy conservation kit described previously will be offered as an incentive for customers to complete a comprehensive online audit. Industry standard online audit software typically offers multiple levels of specificity that allow the customer to improve the accuracy of the report by providing additional data for analysis. Customers willing to complete the most comprehensive audit are more likely to install low-cost measures given the effort required.

Phase 2: Home Walk-Through Energy Analysis: The implementation contractor will provide customers with a 1-hour walk-through audit of their home, the product of which is a report detailing opportunities to improve their energy efficiency. The auditor will collect data on each home for use in identifying cost effective energy efficiency improvements using modeling software. The product of the audit will be a report that prioritizes potential



improvements, estimates their cost after utility incentives are applied, and estimates the resulting energy cost savings and payback timeframe. The auditor will also install appropriate low-cost measures including CFLs and water-saving devices as a condition for participation in the initial audit.

The use of a blower door test at the time of the initial audit will be an area of discussion between AEP Ohio and the selected implementation contractor, as this detail of the program design could be an optional feature.

The implementation contractor will provide customers with two options for completing improvements identified through the energy audit. They may either:

(1) choose a contractor from a prequalified list of contractors with pre-negotiated rates in which case the program will manage the project to provide a turn-key service, or

(2) select a contractor from another list of pre-approved contractors as qualified by AEP Ohio.

However, customers will need to solicit quotes for work from contractors on their own, or choose to go into the marketplace and select and manage their own contractors. AEP Ohio will consider a small fee for the walk-through analysis, reimbursable if the customer proceeds with a number of recommended measures.

Prequalified "captive" contractors will be selected through a competitive bid process based on their level of expertise and piecemeal price for specified improvements. Utilizing a core group of captive contractors to provide turnkey direct installation services will improve installation rates as the time and effort required to select and manage contractors is a key barrier to consumers implementing improvements. Further, it will allow AEP Ohio to closely manage customer service and quality control to ensure measures are properly installed. Finally, it is expected that AEP Ohio will negotiate more favorable rates with captive contractors than customers will be able to secure in the open market due to the volume of work the program will generate. While initially it is anticipated that the implementation contractor will be the lead in conducting the audit and negotiating and selecting "captive contractors", it is envisioned that overtime, this function will be transferred to leading private sector contractors who can provide a similar service.

Potential improvements that are not immediately addressed by consumers will be tracked and the data used for hyper-accurate targeting of future promotion. For example, AEP Ohio may implement an ongoing direct mail campaign including a letter that is periodically sent to a customer reminding them of the additional energy cost they have incurred as a result of not implementing an improvement. Bonus incentives may be offered during limited term promotions in conjunction with the campaign as a means to ramp up participation and manage goals and budgets.

Phase 3: Home Performance with ENERGY STAR: AEP Ohio's implementation contractor will assist with the coordinated development of a statewide network of independent contractors who are trained and mentored on the delivery of a comprehensive energy analysis and measure installation under the Home Performance with ENERGY STAR model. This phase will be staged over three years, focusing initially on training contractors to Building Performance Institute ("BPI") standards on building science, and over time focusing on marketing and incentive packages to accelerate customer awareness and demand. Customers will pay a market-based fee for the analysis and may receive partial reimbursement when recommendations are implemented.

Financial incentives for building shell measures will be available to homeowners, along with the lighting, appliance, and equipment incentives outlined in the market-channel programs.

Incentive Strategy

The on-line energy analysis will be provided free of charge to all residential customers. The walk-through energy analysis will have a fee associated with it (around $150) in order to represent the value of the service to customers and help screen those that are unlikely to implement improvements. Participants who implement at least $1,000 worth of measures as a result of the analysis will have the audit fee reimbursed. The comprehensive home performance analysis will have a market-based fee structure, again with reimbursement for measures implemented. AEP Ohio customers will also receive financial incentives for implementing the building shell measures listed below.

Eligible Measures

The measures listed below have been specified for planning purposes. AEP Ohio will revise eligible measures as needed in accordance with current market conditions, technology development, EM&V results, and program implementation experience.

Measures addressed will include:

- Low Cost Measures Kit
- Attic Insulation (flat and slope)
- Basement Wall Insulation
- Crawlspace Insulation
- Sidewall Insulation
- Air Infiltration Reduction(basement/crawlspaces, attics, flue/chimney, door and window frames, exposed sill plates, top wall plates in attics, open attics stairs/walls, base and ceiling molding, fireplace/mantel)
- Duct sealing
- HVAC maintenance /cleaning
- Furnace replacement

Implementation Strategy

Key elements of the implementation strategy include:

- **Purchase and installation of On-Line Energy Analysis.** AEP Ohio will purchase online audit software from a credible vendor. The cost for the on-line analysis will be accounted for in this program and with associated savings.
- **Hiring and training of energy advisors for walk-through analysis.** For Phase 2 of the program, AEP Ohio's implementation contractor will recruit and train a team of residential energy advisors to deliver walk-through analyses and provide direct installation of low-cost measures. The contractor will also develop/provide a report format for the customer and arrange competitive pricing with local contractors for the weatherization work.
- **Captive installation contractor recruitment and training.** AEP Ohio's implementation contractor will facilitate the recruitment of HVAC, water heating, and insulation contractors to provide turn-key services through a competitive bid process which will be conducted on an annual basis. These contractors will be provided with training on best practices and will be subject to quality control inspections to ensure the quality of work and integrity of savings claimed.
- **Market based contractor training.** The implementation contractor will provide opportunities for any interested contractor to receive training on best practices and program terms and conditions to also become a qualified contractor.
- **Application processing**. AEP Ohio's implementation contractor will coordinate processing of all incentive applications, verification of eligibility and prompt delivery of incentive checks to contractors/customers.
- **Development of market-based infrastructure of Home Performance contractors.** AEP Ohio's implementation contractor may coordinate with other state utilities to develop a strategy and system for recruiting and training Home Performance contractors.
- **Collaboration with other Ohio utilities**: AEP Ohio intends to collaborate with other Ohio utilities when feasible to ensure coordination of home energy analyses so that both electric and gas measures are addressed.

Strategies to limit free ridership and promote spillover include:

- The program will charge a fee for walk-through audits to represent the value of the service and to target customers who want to take action but feel they need more information before they're able to act.
- The program will offer incentives at a sufficient level to motivate customers who would not implement improvements in the absence of the program due to the first cost barrier.
- The program will utilize AEP Ohio customer billing information to identify targeted high-use customers who are most likely to benefit from the audit program. Under confidentiality agreements, this data will be made available to AEP Ohio's implementation contractors to assist with

targeted program marketing and research.

Implementation-related administrative requirements will be handled by a third-party implementation contractor, selected through a competitive bid process. The implementation contractor will be responsible for:

- Energy Advisor recruitment and training
- Walk-through analysis, report, and scheduling tool
- Marketing strategy and materials
- Field services
- Contractor/store education, training and outreach
- Incentive processing
- Assist with development of network of Home Performance providers
- Data tracking and reporting
- Budget tracking and reporting
- Contact (call) center services
- Managing public relations
- Customer satisfaction/Problem resolution

Marketing Strategy

Three key marketing strategies will drive participation in the program:

- Direct mail campaign targeted to specific geographic areas
- AEP Ohio newsletter bill inserts
- Program webpage
- Press releases in targeted communities
- Mass media advertising
- Through non-captive contractors

The program will rely primarily on targeted direct mail campaign to generate participation as this strategy allows for targeting by geographic area and customer and therefore greater control of workflow than mass media efforts. It is necessary to concentrate efforts on specific geographic areas to improve efficiency by ensuring auditors do not travel further than necessary between audits. Customers may be targeted for 2-3 successive mailings to maximize close rates. Utility bill inserts, mass media advertising, and press releases to targeted areas may be used on a limited basis to ramp up production as needed.

The program webpage and online bill analysis system will also promote the availability of the program to interested customers.

Contractors will be provided with information about the availability of the program and utility incentives through direct mail and periodic initiations to training sessions.

Tasks	Timeframe
Selection of Program Implementation Contractor	3 months
Phase 1: On-Line Energy Analysis available to customers	8 months
Phase 2: Walk-through energy analysis available	8 months
Phase 2: Financial incentives for building shell measures available	1 year
Phase 3: Initial development of network of comprehensive Home Performance providers	2 years

EM&V Strategy

All evaluation activities will be conducted by a third-party contractor selected through a competitive bidding process. An integrated evaluation approach will be taken which includes: addressing evaluation at the onset of program design, collecting evaluation data as part of program administration, assessing and documenting baseline conditions, establishing tracking metrics, developing and refining deemed savings measure databases, as well as, conducting primary and secondary research as part of impact, market, and process evaluations.

The overall goal of the **impact evaluation** will be to assess the development of the market infrastructure, savings for the program measures, and program cost-effectiveness. Primary impact metrics are energy savings per unit, program/contractor participants, net-to-gross ratio and program cost-effectiveness. Energy savings will be determined by a literature and data review, billing analysis of participants compared to non-participants and conducting field research with a selected sample of participants. A baseline market survey of contractors will be conducted to determine current practices; this survey will be repeated regularly to assess changes in the market infrastructure. Self-report surveys with both participants and non-participants will be used to assess free riders/spillover and process variables such as barriers to participation, and satisfaction with the program delivery. In addition the process evaluation will interview program mangers and other trade allies to assess the delivery approach and operations. These surveys will be enhanced by collecting market data and assessing trends through secondary literature research.

The **process evaluation** will be conducted during the first program year and then coordinated with follow-on impact evaluation work to be performed once program-approved measures have been installed and operating for a sufficient time to enable a robust impact evaluation.

AEP Ohio Administrative Requirements

AEP Ohio will be responsible for general administrative oversight of the program portfolio which will require 0.75 FTE to address the following:

- Recruitment, selection, and management of the implementation contractor(s)
- Coordination of marketing strategy/public relations among programs and market sectors
- Coordination of all educational services
- Data warehousing
- Recruitment, selection, and management of the evaluation contractor
- Goal achievement within budget

Participation

Incremental Annual Participants (units installed)				
Measure	2009	2010	2011	Total 2009 - 2011
Pin Based CFL Table Lamp	1,636	2,202	2,684	6,522
9-16W Pin Based CFL – Outdoor Fixture	1,031	1,368	1,635	4,034
17-24W Pin Based CFL – Outdoor Fixture	415	554	669	1,638
Indoor Torchieres	1,972	3,563	5,792	11,328
9-16W Pin Based CFL Fixture	975	1,293	1,544	3,812
Pipe Insulation	7,897	13,196	22,040	43,133
Improved Wall Insulation (per 1000 sq. ft.)	972,636	1,265,263	1,482,765	3,720,664
Reduce Infiltration (per 1000 sq. ft.)	3,624	4,727	5,550	13,902
HVAC testing and Maintenance (ton)	3,988	5,974	8,365	18,327

Duct Repair (homes)	1,265	1,667	1,993	4,925

Incremental Annual Participant Costs (2009$)			
2009	2010	2011	Total 2009 - 2011
$555,083	$771,107	$987,269	$2,313,459

Budget

Incremental Annual Budget ($000s) – Total			
2009	2010	2011	Total 2009 – 2011
$990,308	$1,273,138	$1,576,956	$3,840,402

Incremental Annual Budget ($000s) – Incentive			
2009	2010	2011	Total 2009 – 2011
$471,575	$636,569	$788,478	$1,896,622

Incremental Annual Budget ($000s) – Administrative			
2009	2010	2011	Total 2009 – 2011
$518,733	$636,569	$788,478	$1,943,780

Savings Targets

Incremental Annual Energy Savings (Net MWh) – at Meter			
2009	2010	2011	Cumulative Total 2009 – 2011
5,194	7,558	10,447	23,200

Incremental Annual Summer Peak Demand Savings (net kW) – at Meter			
2009	2010	2011	Cumulative Total 2009 – 2011
616	892	1,225	2,733

Benefit-Cost Test Results

Benefit-Cost Test	2009-2011 Benefit-Cost Test Ratio
Total Resource Cost (TRC)	1.3
Utility System Resource Cost (UCT)	2.0
Participant Cost (PCT)	3.9
Rate Impact Measure (RIM)	0.5

6.1.3 Low Income

AEP Ohio: Low Income Program

Objective

- Generate energy savings for residential low-income customers through installation of a wide range of cost-effective weatherization upgrades and other measures in eligible dwellings.
- Enhance services available to low-income customers in AEP Ohio service territory through a coordinated effort with local weatherization providers in order to provide comprehensive assistance at lower administration costs.

Target Market

The AEP Ohio Low Income Program targets moderate and high use customers with total annual household income at or below 200% of federal poverty guidelines who receive electric service from AEP Ohio. Services could include single family and multi – family buildings. High use customers with income above 200% of the federal poverty level may be eligible for services with co-payment amounts that are to be determined.

Program Duration

AEP Ohio expects to offer the Low Income Program through December 31, 2011. It is anticipated that the Low Income Program will continue beyond the current ESP filing period.

Program Description

The AEP Low Income Program is designed to provide home energy services to AEP Ohio customers with limited income to assist them in reducing their electric energy use and managing their utility costs. This program will help facilitate the implementation of cost-effective electrical energy-savings measures in residential low-income households.

AEP Ohio recognizes the performance of current energy efficiency programs delivered through the Energy Partnership Program ("EPP") and intends to build on their efforts to enhance service delivery within AEP Ohio's service territory. In recognition of the need for effective integration with existing services, the program has the following components, modeled after existing services:

- High Use Baseload service is targeted toward eligible customers with high electric baseload (non heating/cooling) usage, defined as greater than 8,000 kWh/yr., and includes extensive lighting retrofits, replacement of inefficient refrigerators and freezers, electric hot water reduction measures, and energy education
- Moderate Use Baseload service is targeted toward eligible customers with annual baseload usage of between 4,000 and 8,000 kWh and includes the same measures as the High Use program, but allows for a more streamlined energy audit process
- Targeted Energy Efficiency ("TEE") service is targeted toward eligible

customers with moderate or high electric heating and cooling loads (defined as greater than 6,000 kWh/yr in heating or cooling) that, in addition to the baseload measures, provides weatherization of the building shell including insulation and air sealing.

Incentive Strategy

Equipment and installation costs for all eligible measures will be provided free to eligible customers and properties. All funding for the program will be provided by AEP Ohio.

Eligible Measures

Each of the program channels is summarized below as they are planned to be delivered to customers along with the associated measures. The list below has been specified for planning purposes only. AEP Ohio will establish eligible measures and incentive levels as needed in accordance with current market conditions, planning studies, technology development, EM&V results, and program implementation experience.

Electric Baseload Measures

- Compact fluorescent lamps (screw-in and pin-based fixtures)
- Refrigerator and freezer replacement
- Low-flow showerheads
- Faucet aerators
- Water heater insulation
- Pipe insulation
- Tank temperature turn reduction
- Water bed mattress pads

Weatherization Measures

- High-efficiency furnace with ECM motor
- Attic and wall insulation
- Crawlspace insulation
- Air sealing
- Duct sealing

Implementation Strategy

Implementation will be managed by qualified, third-party contractor(s) selected through a competitive bid process. AEP Ohio's implementation contractor(s) will schedule a visit with the customers and send out a crew of installers to deliver services on a case-by-case basis. 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, energy education and an action plan. Following the visit, 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 customers. The purpose of this follow-up is to complete the installation of efficiency measures, to remind customers of their responsibilities and to review the benefits of the program.

Key elements of the implementation strategy include:

- **Coordination** with existing EPP providers and non-electric utility providers to ensure customers are receiving cost effective services

but are not receiving redundant services. Services will be provided through third-party contractors that can include existing EPP providers as well as private sector providers. Selection(s) will be made through a competitive bid process. Payments will be made directly to the contractors for all implemented electric measures. Contractors will be responsible for all necessary data collection (with forms to be developed by AEP Ohio), providing a detailed breakdown of measures installed, invoices, customer release forms, and other information deemed necessary by AEP Ohio to document energy savings and cost.

- **Target** occupants of single and multi-family properties with low-income residents to provide the turnkey direct install services for individual living units and common areas.
- **Training** The implementation contractor will be responsible for ensuring that training is available for all staff. Additionally, the implementation contractor will provide in-field monitoring and training, to ensure that field staff is finding all cost-effective opportunities for measures, as well as educating customers on energy savings actions. Where deficiencies are seen, the implementation contractor will provide supplemental training.

Marketing Strategy

Currently customers are selected and recruited based on an analysis of Percentage of Income Payment Plan ("PIPP") customer electric usage data provided by the utilities to local low income agencies. The AEP Ohio Low Income Program will recruit customers through the same process for those customers falling under 175% of poverty level. Additionally, the AEP Ohio Low Income Program will serve customers up to 200% of poverty level, who are currently outside the reach of current programs.

Additional marketing efforts will target those hard-to-reach segments of the population and will build on existing efforts and be closely coordinated with local providers. Key elements of the marketing strategy include:

- Targeted outreach through local agencies
- Websites and newsletters
- Press release
- Posters in municipal buildings

Milestones

The following chart shows the timeline for the key program milestones and program advancement activities. These dates are subject to change, but it is essential that the program is launched with sufficient lead time for the cooling or heating season.

Tasks	Timeframe
Selection of Program Implementation Contractor	2 months
Program planning and materials developed	3 months
Initial mailing to contractors/trade allies	4 months

Kickoff meetings with contractors/trade allies	5 months
Program launch – marketing begins	5 months

EM&V Strategy

All evaluation activities will be conducted by a third-party contractor selected through a competitive bidding process. An integrated evaluation approach will be taken which includes: addressing evaluation at the onset of program design, collecting evaluation data as part of program administration, assessing and documenting baseline conditions, establishing tracking metrics, refining deemed savings measures, as well as, conducting primary and secondary research as part of impact and process evaluations.

The overall goal of the **impact evaluation** will be to validate/re-calibrate the deemed energy savings values, verify installation and determine program cost-effectiveness. Primary impact metrics are savings per unit, program participants, and program cost-effectiveness. Surveys with program managers, contractors, owners of multi-family properties and other trades allies will be conducted to address process efficiency such as ease of participation, satisfaction, the operational conditions of the program and ways to improve the program.

The **process evaluation** will be conducted during the first program year and then coordinated with follow-on impact evaluation work to be performed once program-approved measures have been installed and operating for a sufficient time to enable a robust impact evaluation.

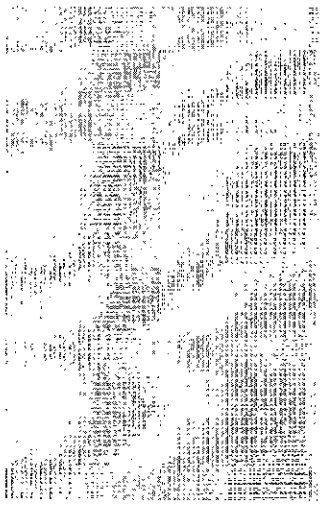
AEP Ohio Administrative Requirements

AEP Ohio will be responsible for general administrative oversight of the program portfolio. It is estimated that a 1.0 full-time equivalent ("FTE") will be required for program oversight. Key oversight functions include:

- Recruitment, selection, and management of the implementation contractor(s)
- Coordination of marketing strategy/public relations among programs and market sectors
- Development and placement of marketing materials with input from the implementation contractor
- Coordination of all educational services
- Data warehousing
- Recruitment, selection, and management of the evaluation contractor
- Goal achievement within budget

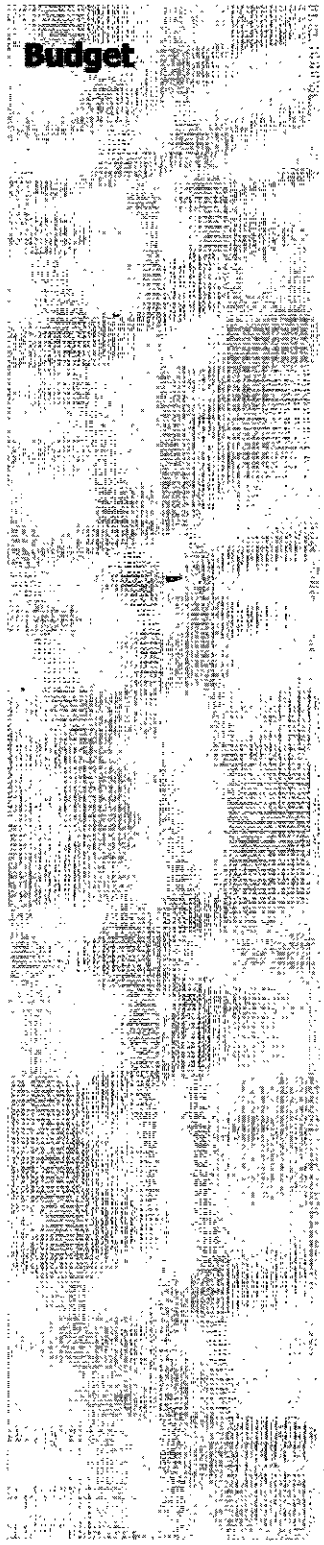
Participation

Incremental Annual Participants (units installed)				
Measure	2009	2010	2011	Total 2009 – 2011
9-16W Screw-in CFL Lamp	646,716	1,080,467	1,254,457	2,981,640
17-24W Screw-in CFL Lamp	132,915	237,483	292,018	662,416
25-34W Screw-in CFL Lamp	67,480	112,790	130,858	311,128
Over 34W Screw-in CFL Lamp	48,839	75,472	81,042	205,353
9-16W Screw-in CFL – Outdoor Lamp	30,731	52,283	61,726	144,739
17-24W Screw-in CFL – Outdoor Lamp	3,723	6,766	8,438	18,927
25-34W Screw-in CFL – Outdoor Lamp	9,191	15,691	18,622	43,503
Over 34W Screw-in CFL – Outdoor Lamp	656	1,080	1,238	2,974
Improved Wall Insulation (per 1000 sq. ft.)	647,758	842,642	987,495	2,477,895
Reduce Infiltration (per 1000 sq. ft.)	2,414	3,148	3,696	9,258
Room A/C - Energy Star	220	285	329	834
HVAC testing and Maintenance	2,656	3,978	5,571	12,206
Duct Repair (homes)	842	1,110	1,327	3,280



Energy Star Air Source Heat Pump (ton)	397	575	775	1,747

Incremental Annual Participant Costs ($/unit)			
2009	2010	2011	Total 2009 – 2011
$0	$0	$0	$0



Incremental Annual Budget (2009$) – Total			
2009	2010	2011	Total 2009 – 2011
$4,236,236	$5,485,211	$7,234,834	$16,956,281

Incremental Annual Budget (2009$) – Incentive			
2009	2010	2011	Total 2009 – 2011
$2,022,524	$2,739,609	$3,592,667	$8,354,800

Incremental Annual Budget (2009$) – Administrative			
2009	2010	2011	Total 2009 – 2011
$2,213,712	$2,745,601	$3,642,167	$8,601,481

Savings Targets

Incremental Annual Energy Savings (Net MWh) at Meter			
2009	2010	2011	Cumulative Total 2009 – 2011
12,149	17,640	23,400	53,190

Incremental Annual Summer Peak Demand Savings (net kW) at Meter			
2009	2010	2011	Cumulative Total 2009 – 2011
1,433	2,084	2,764	6,282

Benefit-Cost Test Results

Benefit-Cost Test	2009-2011 Benefit-Cost Test Ratio
Total Resource Cost (TRC)	1.5
Utility System Resource Cost (UCT)	2.1
Participant Cost (PCT)	N/A
Rate Impact Measure (RIM)	0.5

6.1.4 Residential New Construction

AEP Ohio: Residential New Construction Program

Objective

Produce long-term electric energy savings in the consumer sector by affecting the construction of single family homes and duplexes that meet the ENERGY STAR National Performance Path efficiency standard.

Target Market

New homebuilders. Although all builders are eligible to participate, the program will specifically target all outreach activities to those builders who are not currently Tier 1 ENERGY STAR partners, meaning not every home they build meets the standard.

Program Duration

New construction services will be an ongoing element of the program portfolio. Services will begin in Year 1, though due to the long lead time required to train builders, for them to sell customers new ENERGY STAR homes, and to build the homes, we do not anticipate significant savings from this program until summer 2010.

Program Description

The New Construction program will recruit and educate select builders and their trades on the benefits associated with ENERGY STAR homes and building practices designed to improve upon baseline efficiency. Builders will be provided with financial incentives to meet the ENERGY STAR standard and to install premium-level efficient equipment.

The program will identify and recruit key builders who do not consistently (or seldom) build homes to meet the ENERGY STAR standard. Builders who choose to participate in the program will gain access to cash-back incentives designed to cover approximately 30% of the cost to upgrade and certify each home. In addition, they will be provided with personalized training on marketing ENERGY STAR to customers, the ENERGY STAR building standards, and building practices designed to meet them.

Incentive Strategy

A tiered incentive structure is planned for the New Construction program: $500 for ENERGY STAR Homes that achieve a HERS Rating Index $\leq$ 85, and $1000 for ENERGY STAR Homes that achieve a HERS Score $\leq$ 70. The intent is to encourage builders to strive for the higher standard (i.e. lower score), which results in nearly twice the first year savings. Builders must meet all requirements of the ENERGY STAR National Performance Path standard.

The program will also provide an incentive of $100 to Home Energy Raters on up to 5 ratings done for builders who have not previously achieved the ENERGY STAR standard.

Eligible Measures

The measures listed below have been specified for planning purposes. AEP Ohio will revise eligible measures as needed in accordance with current market conditions, technology development, EM&V results, and program implementation experience.

- ENERGY STAR Home Tier 1
- ENERGY STAR Home Tier 2

Implementation Strategy

Key elements of the implementation strategy include:

- **Recruit/train team of Home Energy Raters.** AEP Ohio's implementation contractor will need to identify existing resources with appropriate training and experience. New raters may need to be trained as well to RESNET standards. This can be done simultaneously with builder recruitment.
- **Outreach to targeted builders.** AEP Ohio's implementation contractor will utilize experienced field representatives to meet with builders, promote the benefits of ENERGY STAR homes, and generate interest in the program.
- **Conduct builder training on marketing ENERGY STAR homes.** Participating builder training efforts will focus first on the benefits associated with ENERGY STAR from the customer perspective including: improved efficiency, comfort, safety, and durability. Sales training will equip each builder with methods to "up sell" their customers on investing in meeting the ENERGY STAR standard. Builders will also be educated regarding the opportunity to improve their business by differentiating themselves using the nationally recognized ENERGY STAR Brand.
- **Conduct builder training on the ENERGY STAR performance standard.** The second phase of the training process will focus on the ENERGY STAR standard and building practices designed to meet it. Key topics will include techniques for improving the building shell to minimize thermal loss and air infiltration, the thermal bypass checklist, and identifying high efficiency equipment and the principals of proper installation.
- **Coach and mentor participating builders and raters.** Once the initial training is complete, the program will provide technical assistance, market recognition and financial incentives to participating builders and their trade partners, and raters on an ongoing basis.

Strategies to limit free ridership and promote spillover include:

- To minimize free ridership, the program will target builders who do not currently meet the ENERGY STAR standard. Secondary targets will include builders who currently meet the ENERGY STAR standard, but only on a minority of homes. It is important to note that builders who already meet the ENERGY STAR standard on a majority of their homes will still be eligible to receive the incentives under this proposed scope of

work. However all outreach will be targeted to builders who are unlikely to be free riders in order to achieve a balance between customer equity and maximizing net energy savings.

- To further limit free ridership, builders must install both a high efficiency water heater and heating system in each home to qualify for the new construction incentive.

Implementation-related administrative requirements will be handled by a third-party implementation contractor, selected through a competitive bid process. The implementation contractor will be responsible for:

- Managing subcontractors
- Budget tracking
- Contact (call) center services
- Enforce customer service standards
- Data tracking systems
- Onsite verification of incentive claims
- Managing public relations
- Problem resolution
- Manage and oversee procurement
- Supporting evaluation activities

Marketing Strategy

The program will be marketed to select builders primarily through direct business-to-business contacts. AEP Ohio's implementation contractor will develop opportunities to present the program at builder and other trade association meetings, and to place information in association newsletters. The program will be marketed to consumers at Home Shows, Parade of Homes, and other home-building focused events.

Milestones

Tasks	Timeframe
Selection of Program Implementation Contractor	3 months
Program Planning and Materials Developed	7 months
Initial mailing to builders	8 months
Kickoff meetings with builders/trades	9 months
Program launch – new home season	9 months

EM&V Strategy

All evaluation activities will be conducted by a third-party contractor selected through a competitive bidding process. An integrated evaluation approach will be taken which includes: addressing evaluation at the onset of program design, collecting evaluation data as part of program administration, assessing and documenting baseline conditions, establishing tracking metrics, developing and refining deemed savings measure databases, as well as, conducting primary and secondary research as part of impact and process evaluations.

The overall goal of the **impact evaluation** will be to validate/calibrate the deemed savings values, verify installation and determine program cost-effectiveness. Primary impact metrics are savings per unit, program

participants, net-to-gross ratio and program cost-effectiveness. Deemed savings will be determined by a literature and data review, analysis of program records and conducting a field research study with a selected sample of participants. Primary market research (self-report surveys) with both participants and non-participants will be used to assess free riders/spillover, awareness of the program, ease of participation and satisfaction with the program and other process efficiency issues. Interviews with program mangers, the implementation contractor, home builders, raters, and other market players will be conducted to assess the operational conditions of the program and to identify ways to improve the program delivery and participation. These surveys will be enhanced by collecting market data and assessing trends.

The **process evaluation** will be conducted during the first program year and then coordinated with follow-on impact evaluation work to be performed once program-approved measures have been installed and operating for a sufficient time to enable a robust impact evaluation.

AEP Ohio Administrative Requirements

AEP Ohio will be responsible for general administrative oversight of the program portfolio which will require 1.0 FTE to address the following:

- Recruitment, selection, and management of the implementation contractor(s)
- Coordination of marketing strategy/public relations among programs and market sectors
- Development and placement of marketing materials and advertising
- Coordination of all educational services
- Data warehousing
- Recruitment, selection, and management of the evaluation contractor
- Goal achievement within budget

Participation

Incremental Annual Participants				
Measures	2009	2010	2011	Total 2009 – 2011
Energy Star Home Tier 1	1,330	964	3,572	5,866
Energy Star Home Tier 2	326	230	816	1,372

Incremental Annual Participant Costs (2009$)			
2009	2010	2011	Total 2009 – 2011
$0	$1,157,574	$833,505	$1,991,079

Budget

Incremental Annual Budget (2009$) – Total			
2009	2010	2011	Total 2009 – 2011
$0	$2,430,906	$1,667,011	$4,097,916

Incremental Annual Budget (2009$) – Incentives			
2009	2010	2011	Total 2009 – 2011
$0	$1,157,574	$833,505	$1,991,079

Incremental Annual Budget (2009$) – Administrative			
2009	2010	2011	Total 2009 – 2011
$0	$1,273,332	$833,505	$2,106,837

Savings Targets

Incremental Annual Energy Savings (Net MWh) – at Meter			
2009	2010	2011	Cumulative Total 2009 – 2011
0	5,663	4,081	9,745

Incremental Annual Summer Peak Demand Savings (net CP) – at Meter			
2009	2010	2011	Cumulative Total 2009 – 2011
0	2,845	2,051	4,897

Benefit-Cost Test Results

Benefit-Cost Test	2009-2011 Benefit-Cost Test Ratio
Total Resource Cost (TRC)	1.3
Utility System Resource Cost (UCT)	2.0
Participant Cost (PCT)	2.6
Rate Impact Measure (RIM)	0.7

6.2 Business Program Plans

6.2.1 Prescriptive Incentive Program

AEP Ohio: Prescriptive Incentive Program

Objective

Generate energy savings for all business customers through promotion of high efficiency electric lighting, HVAC, and motors. There are three primary objectives for this program:

- Increase the market share of commercial grade high efficiency technologies sold through market channels
- Increase the installation rate of high efficiency technologies in C&I facilities by businesses that would not have done so in the absence of the program
- Improve operating energy efficiency of existing long life equipment to ensure peak operating efficiency for C&I customers

Target Market

All C&I customers are eligible to participate in this incentive program when they purchase qualifying equipment or services. Generally, the program is designed to offer cross cutting technologies that address a variety of market sectors and industries. Proactive outreach efforts will utilize a targeted strategy to influence specific market participants.

- Market Providers (wholesalers, distributors, contractors, trade allies, and retailers that market qualifying technologies) of various products will be recruited to promote program awareness and participation among their end-use customers

- High-impact/high-need customer sectors (such as schools, municipal buildings, hospitals, food service, and hospitality) to influence implementation of high efficiency equipment who would not have done so in the absence of the program

Program Duration

The Prescriptive Incentive Program will be an ongoing element of the program portfolio.

Program Description

Prescriptive programs are designed to work through existing market channels to affect the installation of targeted technologies. Overall, market channels have a consistent means to drive customers to action and therefore apply to each of the market channels listed below unless otherwise noted. Regardless of the channel, each offers high efficiency technology alternatives to their standard equipment offerings.

The program will affect the purchase and installation of high-efficiency technologies through a combination of market push and pull strategies that

stimulate market demand while simultaneously increasing market provider investment in stocking and promoting them in defined market channels. Additionally, vendors who service and maintain existing high energy use equipment, such as HVAC technologies, will be tapped to secure energy savings of operational equipment not ready for retrofit or replacement. These services will be offered in the market channel. The respective equipment would be delivered to the market.

The program will increase demand by educating business customers about the energy and monetary saving benefits associated with efficient products and equipping market providers to communicate those benefits directly to their customers. To address the first-cost barrier for customers, the program will utilize financial incentives (i.e. cash-back mail-in rebates) averaging 20% to 40% of the incremental cost of purchasing qualifying technologies.

The program will stimulate market provider investment in stocking and promoting efficient products through a targeted outreach effort. The program implementation staff will employ field sales representatives to proactively train and equip market providers to convey the energy and money saving benefits to consumers and communicate equipment eligibility requirements. Further, the existence of cash-back incentives will elevate efficiency to a competitive issue that will naturally motivate market providers to stock and promote targeted products.

The program will also address the business customers who would benefit from tune-up and corrective action to increase the efficiency of existing HVAC equipment in order to increase operational performance. Market providers will educate customers of the importance and benefits of equipment maintenance. Field representatives will also proactively train and equip the service provider.

Incentive Strategy

Three incentive strategies will allow the greatest flexibility to target opportunities and control participation levels:

- Incentives equal to 20% to 40% of the incremental cost to purchase energy efficient products will be offered, and incentives may not exceed 50% of the total project cost. Tiered incentive approaches could also be designed to promote investment in premium efficiency equipment and multi-measure projects as conditions change over time. Technologies that pass cost-effectiveness testing are listed below.

- Special incentive "bonuses" for customers may be offered for limited-time promotions to increase installation of key technologies. A special incentive for market providers (or "Spiff") could be considered if sales fall below goal for any technologies.

- For certain measures (e.g. high performance T-8's and CFLs) and market areas, the program may directly mark-down of the incremental cost of the measures, at the point of sale, as such, significantly reducing the administrative burden for trade allies participating in the program.

Limitations may be placed on Prescriptive Program incentives, including:

- Maximum % of total project cost: 50%

Eligible Measures

The Prescriptive Incentive Program targets measures where the unit energy savings can be reliably predicted and therefore standard per-measure savings ("deemed savings") and incentive levels can be established. This simplifies the application process and reduces administrative costs. The prescriptive program and associated measures will be delivered in a market channel fashion as market providers offer goods and services.

Each of the program measures is summarized below as they are planned to be delivered to customers along with the associated measures. The list below has been specified for planning purposes only. AEP Ohio will establish eligible measures and incentive levels as needed in accordance with current market conditions, planning studies, technology development, EM&V results, and program implementation experience.

Lighting Measures

- Compact fluorescent lamps (screw-in and pin-based fixtures)
- LED exit sign
- High-performance T8 fixtures
- T5 fluorescent fixtures
- High-bay fluorescent fixtures
- Pulse start metal halide
- Electronic dimming ballast
- Delamping with reflectors
- Occupancy sensors
- LED Traffic Signals

HVAC Measures

- High efficiency packaged HVAC equipment (Packaged Terminal Air-conditioners "PTAC", Rooftop units)
- Adding an economizer
- Programmable thermostat
- Reflective window film
- Cool roof replacing a standard roof
- AC Tune-up with advanced diagnostics

Motors and Drives Measures

- NEMA Premium® motors
- Adding electronic adjustable speed drive to fans and pumps (variable frequency drives under 200 hp controlled)

Implementation Strategy

Key elements of the implementation strategy include:

- **Outreach to Market Providers.** The program will utilize field representatives to inform and recruit participating market providers. Outreach will include orientation meetings and conducting in-person visits aimed at training and equipping market providers to communicate program information to customers. Field representatives will ensure that providers have an updated stock of program materials. Key market providers that will be targeted include:
  - Lighting distributors, wholesalers, and electrical contractors
  - HVAC distributors, mechanical contractors, and service providers
  - Motors/Variable Frequency Drive distributors and retailers
  - Select consumer retailers that sell to contractors and businesses
- **Outreach to Targeted Customers.** The program implementation staff will work with AEP Ohio account managers to get information to business and institutional customers. The target contacts will be in house energy managers, facility managers, building operators, and related personnel tied to facility operation. The program implementation staff and/or AEP Ohio account managers will assist buisness customers in determining whether the prescriptive or custom approach would be most appropriate for their operations. The program implementation staff will assist customers as necessary with incentive application requirements. Cities and municipalities will be targeted to promote upgrading traffic signals to LED.

All program-specific administrative requirements will handled internally by a third-party implementation contractor selected through a competitive bid process. The implementation staff would be responsible for:

- Marketing strategy and materials
- Market provider outreach, recruitment, and training
- Trade Ally relations and problem resolution
- Product eligibility knowledge and communication
- Reporting to utility
- Maintain and manage database

Marketing Strategy

The Prescriptive Incentive Program will employ the following marketing strategies:

- **Engage Market Providers.** Outreach and training will be provided to a targeted group of providers that have business motivations for promoting prescriptive incentives to their customers. They will be equipped with marketing and promotional materials (such as product sheets, incentive forms, case studies) and training on program terms and conditions. Outreach activities will include:
  - Mailing program materials
  - Follow-up telephone calls
  - Orientation meetings

- In person visits by field representatives

- **Directly Market to Targeted Customers.** Depending on potential budget limitations, AEP Ohio may decide to initially pursue a targeted marketing strategy with business customers to ensure that the program is not over-subscribed. Initial targeted customer sectors might include schools, municipal office buildings, retail, food service, hospitals and lodging. Outreach activities will include:
  - *In person visits* by AEP Ohio account managers to the top business consumers
  - Walkthrough energy audits for the top business consumers to identify opportunities for efficiency improvements
  - Targeted advertising in trade and business publications
  - Outreach to trade and business associations to recruit their assistance in distributing information about programs through existing communication channels
  - Promotions by trade allies
- **Provide Complete Website Presence.** The Prescriptive Incentive Program will be comprehensively outlined on the AEP Ohio website. Customers and market providers will be able to review qualifying measures and download incentive applications.
- **Conduct Cooperative Advertising.** AEP Ohio may consider the option of cooperative marketing with interested equipment distributors in the promotion of high efficiency equipment.

Milestones

Tasks	Timeframe
Selection of Program Implementation Contractor	1 month
Program materials developed	3 months
Initial mailing to market providers	3 months
Program launch – umbrella marketing begins	3 months
Follow-up telephone calls to market providers	4 months
Market provider orientation meetings	9 months

EM&V Strategy

All evaluation activities will be conducted by a third-party contractor selected through a competitive bidding process. An integrated evaluation approach will be taken which includes addressing evaluation at the onset of program design, collecting evaluation data as part of program administration, assessing and documenting baseline conditions, establishing tracking metrics, developing and refining deemed savings measure databases, as well as conducting primary and secondary research as part of impact and process evaluations.

- The overall goal of the **impact evaluation** will be to validate/calibrate the deemed savings values and determine program cost-effectiveness. Self-report surveys with both participants and nonparticipants may be used to assess free riders/spillover. The participant and nonparticipant surveys

will also address program awareness, barriers to participation, participant satisfaction, and process efficiency. These surveys will be enhanced by collecting market data and assessing trends as well as interviews with program staff, vendors, manufacturers, and other trade allies.

- The **process evaluation** will be conducted during the first program year and then coordinated with follow-on impact evaluation work to be performed once program-approved measures have been installed and operating for a sufficient time to enable a robust impact evaluation.

AEP Ohio Administrative Requirements

AEP Ohio will be responsible for general administrative oversight of the program portfolio. It is estimated that a 0.75 full-time equivalent ("FTE") will be required for program oversight. Key oversight functions include:

- Recruitment, selection, and management of an implementation support contractor(s)
- Coordination of marketing strategy/public relations among programs and market sectors
- Development and placement of marketing materials with input from the implementation contractor
- Coordination of all educational services
- Data warehousing
- Recruitment, selection, and management of the evaluation contractor
- Goal achievement within budget

AEP Ohio and its implementation contractor will follow industry best practices during final program design and start-up to ensure success, including:

- Following an integrated evaluation approach as described above
- Assessing current market conditions for energy efficiency product availability and pricing
- Account manager and customer service training
- Completing all program procedures from marketing through verification and payment and conducting a dry-run prior to launch
- Preparing for stronger or weaker than expected participant response

Participation

Incremental Annual Participants (units installed)					
Measure	Units	2009	2010	2011	Total
CFL - Screw-in weighted Watts	Lamp	35,587	93,856	117,825	247,268
CFL - Hard-wired weighted Watts	Fixture	40,281	91,094	158,491	289,866
T8/T5 w/Electronic Ballast	Fixture	122,519	147,394	182,191	452,104
Delamping w/Reflectors (2 lamp)	Fixture	20,590	33,749	57,336	111,675

Occupancy Sensor Motion Detector	Sensor	25,007	33,819	47,920	106,747
175W PS MH HID	fixture-indoor	67	136	250	453
250W PS MH HID	fixture-indoor	22	36	59	118
175W PS MH HID	fixture-outdoor	329	730	1,248	2,307
250W PS MH HID	fixture-outdoor	110	188	327	625
Prem Motor > 10HP	motor (per HP)	820	1,154	1,707	3,682
Adjustable Speed Drives for Fans & Pumps	motor (per HP)	989	1,387	2,031	4,407
Programmable Thermostat	contrd. sqft (1,000s)	1,421	1,724	2,162	5,306
Reflective Window Film	100 sqft window area	18,391	33,539	48,013	99,942
Cool Roof	100 sqft roof area	88,897	109,815	125,808	324,520

Incremental Annual Participant Costs (2009$)			
2009	2010	2011	Total 2009 – 2011
$5,870,843	$7,955,073	$10,884,228	$24,710,145

The following budgets are for LED Traffic Signals only.

Incremental Annual Participant Costs (2009$)			
2009	2010	2011	Total 2009 – 2011
$40,712	$42,799	$47,064	$130,575

Budget

Incremental Annual Budget (2009$) – Total			
2009	2010	2011	Total 2009 – 2011
$8,861,266	$12,906,212	$17,978,141	$39,745,619

Incremental Annual Budget (2009$) – Incentive			
2009	2010	2011	Total 2009 – 2011
$5,870,843	$7,955,073	$10,884,228	$24,710,145

Incremental Annual Budget – Administrative			
2009	2010	2011	Total 2009 – 2011
$2,990,422	$4,951,139	$7,093,912	$15,035,474

The following budgets are for LED Traffic Signals only.

Incremental Annual Budget (2009$) Total (LED Traffic Signals Only)			
2009	2010	2011	Total 2009 – 2011
$310,257	$326,164	$358,669	$995,090

Incremental Annual Budget (2009$) – Incentive (LED Traffic Signals Only)			
2009	2010	2011	Total 2009 – 2011
$168,546	$177,188	$194,846	$540,581

Incremental Annual Budget – Administrative (LED Traffic Signals Only)			
2009	2010	2011	Total 2009 – 2011
$141,710	$148,976	$163,823	$454,509

Savings Targets

Incremental Annual Energy Savings (Net MWh) – at Meter			
2009	2010	2011	Total 2009 – 2011
68,244	123,778	177,348	369,371

Incremental Annual Summer Peak Demand Savings (Net kW) – at Meter			
2009	2010	2011	Total 2009 – 2011
21,409	38,744	55,462	115,615

The following savings are for LED Traffic Signals only.

Incremental Annual Energy Savings (Net MWh) – at Meter (LED Traffic Signals Only)			
2009	2010	2011	Total 2009 – 2011
1,369	1,439	1,583	4,391

Incremental Annual Summer Peak Demand Savings (Net kW) – at Meter (LED Traffic Signals Only)			
2009	2010	2011	Total 2009 – 2011
331	348	382	1,061

Benefit-Cost Test Results

Benefit-Cost Test	2009-2011 Benefit-Cost Test Ratio
Total Resource Cost (TRC)	2.1
Utility System Resource Cost (UCT)	3.3
Participant Cost (PCT)	3.4
Rate Impact Measure (RIM)	0.7

The following ratios are for LED Traffic Signals only.

Benefit-Cost Test	2009-2011 Benefit-Cost Test Ratio (Traffic Signals Only)
Total Resource Cost (TRC)	1.8
Utility System Resource Cost (UCT)	2.6
Participant Cost (PCT)	4.8
Rate Impact Measure (RIM)	0.6

6.2.2 Custom Program

AEP Ohio: Custom Program

Objective

Influence business customers to elect and install high efficiency technologies not addressed through other business programs when considering equipment retrofits or energy saving process improvements. Many business efficiency projects involve multiple technologies resulting in interactive effects in which savings need to be calculated on a project basis. This program offers incentives that are customized to the specific results of the energy saving technologies implemented.

Target Market

The Custom Program will be available to all commercial and industrial customers. Emphasis will be placed on targeting customers whose opportunities could most benefit from a custom approach. This will include customers that have had in-depth energy audits or have identified unique opportunities to improve efficiency but have not taken action. In addition, larger customers serviced by account managers will be emphasized in the early years of the program. In future program years, smaller consumption accounts will be proactively targeted. Direct customer outreach will target decision makers within the customers' organization including: energy managers, facility managers, financial and operations managers, chief engineer and facility/property managers, maintenance supervisors, and building operators. Target markets will include manufacturing facilities, hospitals, schools, hospitality, large offices, and large government facilities.

Program Duration

The Custom Program will be an ongoing element of the program portfolio.

Program Description

The Custom Program is designed to address any cost-effective electricity saving measure not addressed or offered yet through other AEP Ohio programs, including prescriptive incentives. Projects in the Custom Program are more complex and address a system or process most often requiring unique design and technology solutions for each participant, so specific savings and incentives are determined when the project is specified.

Fuel switching, natural gas saving measures, and previously completed projects are not eligible measures in the Custom Program. All technologies are subject to eligibility and verification of savings projections.

In order to minimize free ridership, the Custom Program project eligibility rules will be designed to motivate market providers and customers to: (1) pursue projects that they would otherwise not have implemented, (2) pursue these projects sooner than they otherwise would have or, (3) implement equipment/measures at a higher efficiency level than they otherwise would have.

Incentive Strategy

Customers will be eligible for incentive payments as a percentage of avoided costs. The specific incentive design is to be determined; however, separate incentive components for energy and demand savings could be considered as well as or instead of a simpler incentive based on the Custom Project's demand impact (the typical approach used in other Custom programs). The incentive design will be determined according to the relative importance of energy and demand impacts, respectively. With separate incentives for energy and demand, AEP Ohio can adjust incentive payment rates in response to progress toward achieving energy or demand impact goals.

Incentives

Energy savings:	$0.08/kWh
Summer Peak Demand Savings:	$100/kW

Limitations may be placed on Custom Program incentives, including:

- Minimum project payback: 1 year
- Maximum project payback: 7 years
- Maximum % of total project cost: 50%

The program implementation staff will work closely with prospective customers to determine if the project qualifies for financial incentives and to assist them in completing an incentive application.

In future years, AEP Ohio may decide to offer an energy efficiency RFP process for larger projects that would exceed the project maximum listed above. In an RFP solicitation, customers or energy efficiency service providers would be allowed to develop proposals and submit them to AEP Ohio for consideration in the Custom Program. The incentive cost would be proposed as part of the submitted proposal and participants chosen based on project cost-effectiveness.

Eligible Measures

Eligible measures will vary given the need be respond to custom applications, and will include:

- Process
- Refrigeration

- Compressed air
- Controls
- Retrocommissioning
- Equipment and applications not addressed through AEP Ohio's other business programs

Implementation Strategy

Delivery of the Custom Program will be achieved through the combined efforts of AEP Ohio energy efficiency program and marketing groups, AEP Ohio account managers, and an implementation contractor hired through a competitive bidding process.

AEP Ohio staff and the implementation contractor will work to generate awareness of the Custom Program among customers and market providers of energy efficiency services and equipment. Several approaches to outreach will be employed which will evolve as the program matures, as described in the marketing strategy below. The objective of outreach activities is to identify and develop custom projects for further analysis.

Outreach by the AEP Ohio account managers will be emphasized in the early stages to expedite previously identified potential for projects that have been stalled at large customers. Greater emphasis will be placed on generating energy efficiency service provider referrals in 2010 and beyond to expand participation and reduce costs as the AEP Ohio's network of program allies grows.

AEP Ohio and the implementation contractor will work with customers and market providers to identify and pre-qualify prospective projects. This may involve completing custom engineering calculations that assess the energy savings potential, payback horizon, project eligibility, and incentive amount.

If the project is deemed eligible, the customer will be offered the opportunity to submit a more detailed Custom Program Application for measure incentives, or if further analysis is required, to submit an application for a feasibility study grant. Both applications provide the guidelines for developing detailed project documentation for review by the program.

Once received, the Custom Program applications (for measure or study grants) receive technical review by the implementation contractor. If the application is approved, the implementation contractor will issue a grant approval letter describing the terms for acceptance of the project. The customer has a limited time (30 days) to sign the acceptance offer to reserve incentive funding. Upon customer signature of the incentive offer the customer has a limited period of time (6 months) to complete the project to be eligible for reimbursement, or request a limited time extension.

Once projects are completed, the implementation contractor will assist the customer to verify the installation to ensure program integrity before issuing payment. Post installation inspections and documentation review

must be completed by the implementation contractor to insure the project is operating as intended. The inspection and documentation review may result in modifications to claimed savings and incentive amount. The implementation contractor will submit final incentive claims to AEP Ohio for payment.

All program-specific administrative requirements will be handled by a third-party implementation contractor, selected through a competitive bid process. The implementation contractor will be responsible for:

- Marketing strategy and messaging
- Market provider outreach, recruitment, and training
- Project identification assistance and pre-qualification screening
- Administrative and technical assistance to customers in completing program applications
- Technical review of applications
- Program participant communications
- Post installation inspections and review
- Incentive claim requests
- Quality assurance of project and technology eligibility
- Data tracking and reporting
- Budget tracking and reporting
- Managing public relations
- Customer satisfaction and problem resolution

Marketing Strategy

The marketing for the Custom Program involves multiple strategies to locate project opportunities that can be unique and site-specific. A direct networking approach will be employed with customers that have completed energy audits or have assigned account managers. Marketing via direct mail to energy efficiency service providers, local economic development organizations, and other business and professional associations will be included in the recruiting approach to expand the outreach to a wider base of customers. In addition, the program will be promoted through advertising in targeted media including professional society newsletters, business journals, press releases, and media outreach.

This strategy for prospecting for projects is highly dependent upon referrals and networking with program allies and utility staff to identify projects that have high probability of implementation. Custom projects can have longer lead times for implementation due to feasibility and design studies, equipment purchasing lead times, installation timelines, and capital equipment planning and approval cycles. As a result, it is advisable to begin aggressive marketing early in the program in order to fill the pipeline with projects in the 2009 calendar year and to queue projects for the escalation of program goals in future years.

Milestones

Tasks	Timeframe
Selection of Program Implementation Contractor	1 month
Program materials developed	2 months
Program launch – marketing begins	2 ½ months

EM&V Strategy

All evaluation activities will be conducted by a third-party contractor selected through a competitive bidding process. An integrated evaluation approach will be taken which includes addressing evaluation at the onset of program design, collecting evaluation data as part of program administration, assessing and documenting baseline conditions, establishing tracking metrics, as well as conducting primary and secondary research as part of impact and process evaluations.

- The overall goal of the **impact evaluation** will be to validate/calibrate the deemed savings values and determine program cost-effectiveness. Self-report surveys with both participants and nonparticipants may be used to assess free riders/spillover. The participant and nonparticipant surveys will also address program awareness, barriers to participation, participant satisfaction, and process efficiency. These surveys will be enhanced by collecting market data and assessing trends as well as interviews with program staff, vendors, manufacturers, and other trade allies.

- The **process evaluation** will be conducted during the first program year and then coordinated with follow-on impact evaluation work to be performed once program-approved measures have been installed and operating for a sufficient time to enable a robust impact evaluation.

AEP Ohio Administrative Requirements

Initial program administration will be conducted by AEP Ohio EE/PDR personnel and Customer Services account representatives. To develop and manage the third-party implementation, it is estimated that 1.0 FTE equivalent will be required for program oversight. Key oversight functions include:

- Customer recruitment
- Recruitment, selection, and management of the implementation contractor(s)
- Coordination of marketing strategy/public relations among programs and market sectors
- Coordination of all educational services
- Data warehousing
- Recruitment, selection, and management of the evaluation contractor
- Goal achievement within budget

Participation

AEP Ohio and its implementation contractor will follow industry best practices during final program design and start-up to ensure success, including:

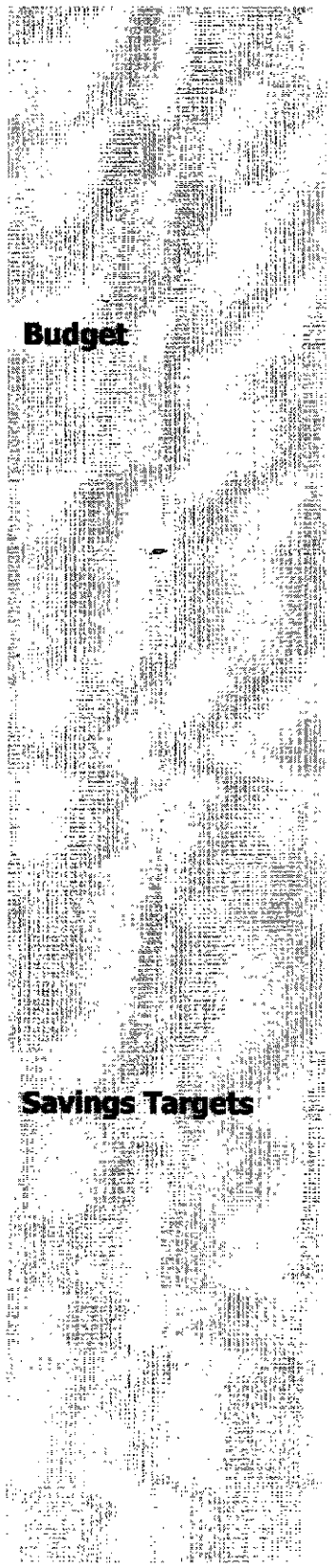
- Following an integrated evaluation approach as described above
- Account manager and customer service training
- Establishing requirements for supporting documentation, analysis methods, and reporting requirements on technical studies
- Completing all program procedures from marketing through verification and payment and conducting a dry-run prior to launch
- Preparing for stronger or weaker than expected participant response

Incremental Annual Participants (units installed)

Measure	Units	2009	2010	2011	Total 2009 – 2011
Spray Nozzles for Food Service	Sink	228	1,018	2,376	3,622
Custom Measure	Unit	68	82	105	255
EMS System - Lighting & HVAC	Contrd. Sq. ft. (1000s)	3,589	4,729	6,630	14,948
Motor Upgrade for Fans & Compressors - ECM & PSC motors	Motor	403	674	1,171	2,248
Evap Fan Controller for Med. Temp Walk-in	Med temp walk-ins	168	299	528	994
Strip Curtains	Sqft of curtain per ton	280	583	699	1,561
Floating Head Pressure Controls	Per ton	12	91	183	286

Incremental Annual Participant Costs ($000s)

2009	2010	2011	Total



$6,746,713	$8,369,292	$10,968,717	$26,084,722

Budget

Incremental Annual Budget (2009$) – Total			
2009	2010	2011	Total 2009 – 2011
$6,958,741	$8,588,662	$11,724,734	$27,272,137

Incremental Annual Budget (2009$) – Incentive			
2009	2010	2011	Total 2009 – 2011
$3,653,036	$4,608,670	$6,155,006	$14,416,712

Incremental Annual Budget (2009$) – Administrative			
2009	2010	2011	Total 2009 – 2011
$3,305,705	$3,979,992	$5,569,728	$12,855,425

Savings Targets

Incremental Annual Energy Savings (Net MWh) – at Meter			
2009	2010	2011	Cumulative Total 2009 – 2011
37,565	49,750	69,622	156,936

Incremental Annual Summer Peak Demand Savings (net kW) – at Meter			
2009	2010	2011	Cumulative Total 2009 – 2011
2,915	3,863	5,413	12,190

Benefit-Cost Test Results

Benefit-Cost Test	2010-2011 Benefit-Cost Test Ratio
Total Resource Cost (TRC)	1.1
Utility System Resource Cost (UCT)	2.2
Participant Cost (PCT)	2.5
Rate Impact Measure (RIM)	0.5

6.2.3 Self Direct Program

AEP Ohio: Self Direct Program

Objective

The objective of the Self Direct Program is to capture energy savings and demand reduction from larger non-residential customers that have the capability to administer internal energy management efforts of their own design. As specified in Senate Bill 221 of the 127th Ohio General Assembly ("SB 221"), commercial and industrial "mercantile" customers that consume more than 700,000 kWh per year of AEP Ohio electricity or are part of a national account involving multiple facilities in one or more states are eligible to request participation in the Self Direct Program. The Self Direct Program allows mercantile customers to commit their energy efficiency and demand response resources to AEP Ohio

Target Market

Commercial and industrial "mercantile" businesses that consume more than 700,000 kWh per year from AEP Ohio, or AEP Ohio customers that part of a national account involving multiple facilities in one or more states are eligible to request participation in the Self Direct Program to self-administer energy management programs for their qualifying energy consumption. Participants in the Self Direct Program are responsible for costs to document energy saving projects and AEP Ohio must independently verify the savings. Each customer accepted for participation in the Self Direct Program by AEP Ohio requires approval by the Public Utilities Commission of Ohio ("PUCO") on a case-by-case basis.

Program Duration

The initial program duration will be through December 31, 2011. It is anticipated that the Self Direct Program will continue beyond 2011.

Program Description

Participants must demonstrate leadership and capability in energy management to be accepted into the Self Direct Program. Participants are responsible for following standard monitoring and verification protocols for measures they identify, implement, and submit for energy savings and incentive credits. Key features of the Self Direct Program, as allowed by SB 221, are that energy saving measures that have been installed prior to acceptance into the Self Direct Program are eligible for submittal as qualifying savings. AEP Ohio mercantile customers are eligible to submit measures achieving energy and peak demand reduction installed as far back as January 1, 2006.

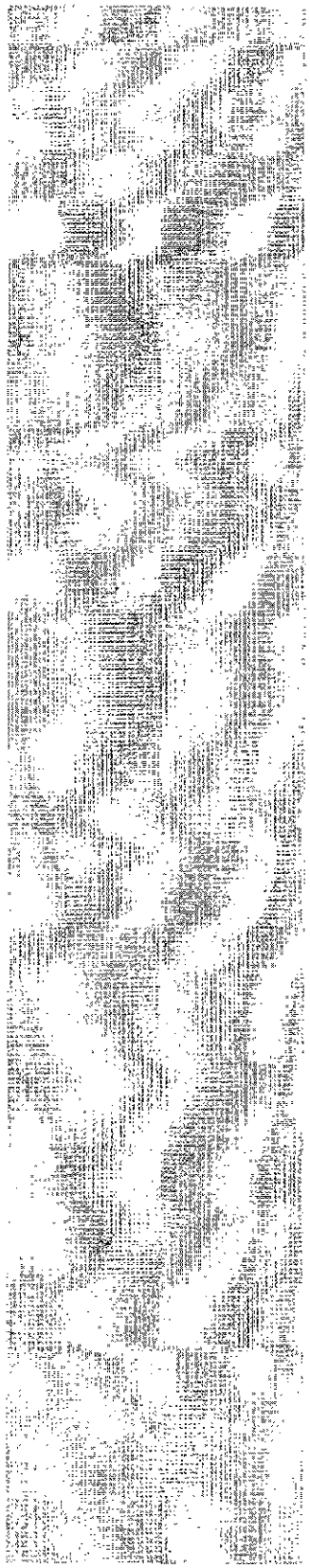
Incentive Strategy

Incentives

Incentives will be 75% of either Custom or Prescriptive program incentives for projects installed from Janaury 1, 2006 forward.

There will be two incentive options.

Option 1:



- Customer commits their energy efficiency and peak demand reduction completed projects to AEP Ohio
- AEP Ohio provides incentive payment upon project approval
- Customer stays in the EE/PDR rider and can continue to participate in all EE/PDR programs

Option 2:

- Customer commits their energy efficiency and peak demand reduction completed projects to AEP Ohio
- Customer is exempt from the EE/PDR Rider for the period of time their committed energy savings equal the Companies' mandated benchmark requirement percentages of energy savings based on the customer's 2006-2008 average annual energy usage baseline.
- Customer can not participate in any EE/PDR programs during the time of exemption

Limitations may be placed on Self Direct Program incentives, including:

- Minimum project payback: 1 year
- Maximum project payback: 7 years
- Maximum % of total project cost: 35%

All incentives are contingent on AEP Ohio review and acceptance of savings claims, and are subject to both pre-installation and post-installation verification. Participants may request Self Direct program incentive payment for retrospective savings once per calendar year.

Customers participating in the Self Direct Program through Option 1 can participate in other programs offered by AEP Ohio, but cannot use funds from multiple programs for the same measures.

The incentive payment in Option 1 is equivalent to an advance payment of a portion of the customer's EE/PDR rider cost obligation due to the requirement that the customer continues to pay the EE/PDR rider cost for the length of time that the customer would otherwise be exempt from the EE/PDR Rider. Option 1 is for customers who have completed some EE/PDR projects but want to use the advanced payment to help support new EE/PDR investments. Option 1 also allows participating customers to continue paying the rider in support of further EE/PDR program participation by the customer. Option 1 supports the goal of achieving maximum energy efficiency improvements from mercantile customers at the lowest cost and reduces rate impacts on all customers by

Option 2 is for those customers who have completed all cost effective energy efficiency improvements. Exemption of EE/PDR rider cost is warranted since no further program participation by the customer is planned.

Eligible Measures

Acceptance by AEP Ohio of measures for savings and incentive credit are on a project by project approach.

To qualify measures for credit, participants follow these rules:

- A Self Direct participant start date will be determined for each customer accepted into the program. Measures installed before the start date will be designated as retrospective measures, and measures installed on or after the start date will be prospective measures.
- A one-time energy savings credit for retrospective measures may be granted by AEP Ohio for measures installed with an in-service date during the three years prior to the participant start date, but not earlier than January 1, 2006. The "in-service" date for retrospective measures means the documented date that the measures were in place and first performing as intended.
- Participants must provide evidence that retrospective measures have a minimum of five full years of remaining useful life after the participant start date.
- Participants must provide documentation of installed measures acceptable to AEP Ohio. Measure savings must be defined relative to a baseline condition acceptable to AEP Ohio.

Implementation Strategy

Initial participation will be driven primarily by referrals from Account Managers and through outreach conducted by business and industry associations. Interested eligible customers will be given an **Application to Participate** in the program. The application will request basic information on the customer's facility and operations as well as the customer's energy management capabilities and accomplishments. Upon receipt of the application, AEP Ohio will confirm eligibility and assist the customer. AEP Ohio will present the application request to PUCO with the customer, and if approved, will execute a PUCO-approved contract with the customer defining the terms of participation in the Self Direct Program. The customer contract will define a participation start date for the customer and provide program information to guide the customer through the process of claiming retrospective savings.

- Efficiency measure identification, purchase, installation, and monitoring and verification ("M&V") are the financial and administrative responsibility of the participant. Participants must adhere to the International Performance and Measurement and Verification Protocol ("IPMVP") protocols for M&V as deemed appropriate by AEP Ohio. Project "QA/QC" (quality assurance/quality control) review will be performed by third-party engineering consultants funded by AEP Ohio. The AEP Ohio consultants will support the participant's implementation and verification process with interpretation of rules and limited technical

assistance, but will not be responsible for primary technical assistance on the project. The AEP Ohio engineering consultants will conduct inspections and review participant savings claim documentation, and will make final savings determination on projects.

Marketing Strategy

Customer marketing efforts will include training presentations, participation in business and industry association events and personal contact by AEP Ohio Account Managers for managed accounts. AEP Ohio will facilitate efforts by business and industry associations to conduct outreach and recruitment for the Self Direct Program to their members.

Milestones

Tasks	Timeframe
Selection of Program Implementation Contractor	1 month
Program materials developed	3 months
Program launch – marketing begins	4 months

EM&V Strategy

All evaluation activities will be conducted by a third-party contractor selected through a competitive bidding process. An integrated evaluation approach will be taken which includes: addressing evaluation at the onset of program design, collecting evaluation data as part of program administration, assessing and documenting baseline conditions, establishing tracking metrics, developing and refining deemed savings measure databases, as well as, conducting primary and secondary research as part of impact and process evaluations.

The overall goal of the **impact evaluation** will be to validate/calibrate the deemed savings values, verify installation and determine program cost-effectiveness. Primary impact metrics are savings per unit, program participants, net-to-gross ratio and program cost-effectiveness. Deemed savings will be determined by a literature and data review, analysis of program records and conducting a field research study with a selected sample of participants. Primary market research (self-report surveys) with both participants and non-participants will be used to assess free riders/spillover, awareness of the program, ease of participation and satisfaction with the program and other process efficiency issues. Interviews with program mangers, the implementation contractor, home builders, raters, and other market players will be conducted to assess the operational conditions of the program and to identify ways to improve the program delivery and participation. These surveys will be enhanced by collecting market data and assessing trends.

The **process evaluation** will be conducted during the first program year and then coordinated with follow-on impact evaluation work to be performed once program-approved measures have been installed and operating for a sufficient time to enable a robust impact evaluation.

AEP Ohio Administrative

AEP Ohio will be responsible for general administrative oversight of the program portfolio which will require 1.0 FTE to address the following:

Requirements

- Recruitment, selection, and management of the implementation contractor(s)
- Coordination of marketing strategy/public relations among programs and market sectors
- Development and placement of marketing materials and advertising
- Coordination of all educational services
- Data warehousing
- Recruitment, selection, and management of the evaluation contractor
- Goal achievement within budget

Participation

N/A

Budget

Incremental Annual Budget (2009$) – Total			
2009	2010	2011	Total 2009 – 2011
$5,000,000	$2,000,000	$2,000,000	$9,000,000

Savings Targets

N/A

Benefit-Cost Test Results

N/A

6.2.4 C&I New Construction Program

AEP Ohio: C&I New Construction Program

Objective

The objective of this program is to work through the design community to influence owners to capture immediate and long-term energy efficiency and peak load reduction opportunities that are available during the design and construction of new buildings, additions, and renovations in the non-residential market. To secure these opportunities it is necessary to overcome barriers such as resistance in the design community to adopt new practices, reluctance by owners to accept increased first cost for efficient options, removing proposed measures through value engineering, and tendency to design individual systems for worst-case conditions rather than efficiency of an integrated system over the range of expected operating conditions.

Target Market

All commercial, industrial, government (local, state, and federal), or institutional new construction projects in the planning or early design-stage will be considered, provided the design team and owner are willing to pursue an integrated design strategy and improve multiple building systems. To be eligible, major renovations must involve a change in occupancy classification or affect at least two of these three systems: building envelope, HVAC systems, or lighting systems. Projects must be pre-approved for participation.

Program Duration

The C&I New Construction Program will be an ongoing element of the program portfolio. Services will begin in 2009, though due to the long lead time required to identify project leads, work with projects in the design phase, and construct the buildings, significant savings from this program are not anticipated until mid-year 2010. From design phase meetings to payment of incentives at building completion requires from 6 months to 3 years, averaging 12 months to 18 months.

Program Description

The program will capture energy efficiency and peak load reduction opportunities through a comprehensive effort to influence building design and construction practices. The program will work with design professionals and construction contractors to influence prospective building owners and developers to construct high performance buildings that provide improved energy efficiency, systems performance, and comfort. Energy saving targets will be accomplished by stimulating incremental improvements of efficiency in lighting, HVAC, and other building systems. The program will seek to capture synergistic energy savings by encouraging the design and construction of buildings as integrated systems. A variety of different commercial new construction guidelines exist to provide design targets: Leadership in Energy and Environmental Design ("LEED®"); Advanced Buildings®, ASHRAE Advanced Energy Design Guides, Green Globes®, etc.

An important focus of efforts will be moving the knowledge gained by designers and architects through program participation into their standard construction practices. The program has been designed to integrate educational activities into implementation while achieving energy savings

from active construction projects.

Program resources to achieve energy saving and market transformation objectives are applied through four primary offerings to participants (participants include design team members, contractors, owners, and developers):

- Targeted **Education, Information, and Outreach** on integrated design practices and benefits will be provided directly to participants through the program and to the broader market by coordinating with outside efforts. Program staff time and resources will focus on information dissemination and teach/learn-by-example during projects with program participants. To encourage market transformation while recruiting program participants, the program coordinates with outside efforts including LEED, Advanced Buildings, ASHRAE, American Institute of Architects ("AIA"), and others. The credibility and relationships built through involvement in outside efforts will help the program recruit construction projects that are early in the design process, when opportunities to integrate energy saving measures into the project are greatest.
- The program will offer **Technical Assistance Services** to provide capabilities that are not yet fully adopted in the market. Services may include facilitation in the design process, reviewing plans and construction bid documents, assisting with design selections, analyzing energy savings, and verifying installation and operation of measures. Technical assistance may be provided by the program administrator or by third-parties contracted for their special expertise.
- The program will offer financial **Design Incentives** to the design team to help offset the costs of developing designs that provide as-built performance that is more energy efficient than their standard practice designs. Payments to the primary design team member are made after the start of construction once program payment criteria have been met.
- The program will offer financial **Measure Incentives** to owners and developers to help reduce cost barriers to adopting electric energy saving measures that have not yet been accepted as standard practice for construction. Payments are made after the program verifies that measures are installed and fully operating or capable of full operation in the case of seasonal uses.

Technical assistance, design incentives, and measure incentives will be offered in varying degrees on individual projects to balance the program resources applied with the potential for saving energy and changing behavior. The program will channel projects through one of two participation approaches:

- **Comprehensive "Whole Building" Approach** offers the highest level of technical assistance and financial incentives for custom design solutions. This approach allows the design team the greatest flexibility to meet energy performance goals by adopting integrated design solutions analyzed through whole-building energy

simulations. This approach is chosen when project size, schedule, complexity, and interest level justify a high level of program resources to achieve the full benefits of integrated building design.

- **Systems Approach** provides a menu of financial incentives and technical assistance to encourage integrated design at the system and component level. Measure incentives are paid for meeting performance criteria described in program materials for system and component performance. Design incentives are available for employing integrated design approaches and meeting program threshold requirements. This approach is chosen when there is opportunity to achieve energy savings through integrated design, but the project size or schedule warrants a more streamlined approach.

Building size, project type, design stage, and project opportunities will guide the selection of participation approach offered on the project. This determination will be made by the program on a case-by-case basis. Generally, new construction and major "gut" renovation projects over 75,000 square feet will be channeled to the Comprehensive Approach when there is commitment by the owner and design team in the pre-design or schematic design stage to explore a wide range of design options. New construction and major renovation projects smaller than 75,000 square feet will most often be channeled to the Systems Approach, as will projects larger than 75,000 square feet that do not justify the Comprehensive Approach. Single end-use lighting or HVAC projects or those too late in design to follow an integrated approach will be referred to prescriptive incentive programs.

Incentive Strategy

To minimize free-ridership, it is intended that design team and measure incentives cover 50% or more of incremental cost. Incentives are set relative to a baseline for cost and energy performance developed to reflect current practice in the service territory. The default baseline will be current state energy code, standard practice determined by research or EM&V, or legally required design specifications. Pre-approval is required for all incentives.

Of the pool of financial incentive dollars available for a project, the program will direct up to approximately 30% toward design team incentives and technical studies, and 70% to efficiency measures. In the Comprehensive Approach, design team incentives will be set at up to 10% of a project's measure incentive. Prescriptive design incentives may be considered over time to encourage certain measures and design approaches. The program will provide energy modeling as an incentive to participate, or offer the design team a nominal incentive to follow program compliance and reporting requirements when conducting owner-funded simulations.

The Comprehensive Approach will have a measure incentive structure that pays independently for kWh and kW, to give flexibility to design teams to make design trade-offs.

The Systems Track will use the same dollars per unit incentives as the Prescriptive program, with some exceptions. Lighting needs to have a program check to limit the lighting power density by building type (design watts per square foot) to ensure there are savings relative to the energy code. Lighting power density improvements will be paid at a fixed rate per square

foot for designs that achieve savings of 15% to 25% below code, depending on building type. An incentive based on square feet gives maximum flexibility to design teams to pick the most appropriate fixtures for their project. Occupancy sensors are standard practice for new construction in certain building types and would not eligible for incentives in those cases.

During the program, baseline assumptions will be monitored and revised as necessary to more accurately represent current standard practice. Incentives will be adjusted as needed in response to market acceptance, evaluation feedback, changing baseline practices, and state energy code upgrades.

Eligible Measures

Cost-effective electrical efficiency and peak load reduction measures that improve upon the program's baseline are eligible for consideration in the program. Fuel switching (electric to alternative fuel) measures, hybrid fuel and grid connected renewable energy systems are not eligible for incentives through this program. Peak reduction measures that result in negative net kWh savings (e.g. thermal cool storage and some geothermal HVAC systems) will be eligible but have the total incentive reduced at the per kWh incentive rate.

Implementation Strategy

To maximize program effectiveness an implementation contractor with in-house new construction design and analysis capabilities and experience will be selected to implement the program. The implementation contractor will provide staff to conduct program management, tracking, marketing, and implementation. Implementation staff will provide technical assistance services to participants, assist participants with program requirements, conduct technical assistance and simulation services, oversee contract technical specialists, perform quality control duties, and inspect measure installations.

Marketing Strategy

A key element for success in the program is securing the involvement of the professional design community early in the design process of construction projects. Project recruitment will be a byproduct of the educational effort on sustainable design targeting the design community. Projects sought will be those early in the design phase and where program intervention could produce significant energy and demand savings. The program will employ lunch and learn presentations, individual contact, and outreach through professional organizations to engage design professionals. The program will coordinate with locally active education efforts.

The design community will be a key resource in reaching building owners and developers, and the program will actively assist the design community in educating owners on the benefits of high performance buildings.

Milestones

Tasks	Timeframe
Selection of Program Implementation Contractor	1 month
Program materials developed	4 months
Program launch – marketing begins	6 months

EM&V Strategy

AEP Ohio will hire an independent evaluator to provide ongoing input on quality assurance, project documentation requirements, and savings verification as well as conduct program evaluation. An integrated evaluation approach will be taken which includes addressing evaluation at the onset of program design, collecting evaluation data as part of program administration, assessing and documenting baseline conditions, and establishing tracking metrics.

The baseline for all projects in the C&I New Construction Program is the more efficient of what the participant would do absent the program intervention or code required minimums. A baseline is established and documented for each project that enters the program. Energy savings will be claimed relative to the project-specific baseline. If a design team does not have a base design to analyze, a default minimum baseline will be used. The initial default minimum program baseline will be set at current state energy code.

AEP Ohio Administrative Requirements

AEP Ohio will be responsible for oversight of the implementation contractor, managing the tracking system, and providing funds for administration, marketing, implementation, and incentive check disbursement. It is estimated that a 0.25 full-time equivalent ("FTE") will be required for program oversight. The implementation contractor responsibilities include ongoing program design, marketing materials, program marketing and implementation, project management and Quality Assurance/Quality Control ("QA/QC"), customer and contractor dispute resolution, tracking and reporting, site verification of installed measures, incentive amount approval, and program goal achievement.

AEP Ohio and its implementation contractor will follow industry best practices during final program design and start-up to ensure success, including:

- Following an integrated evaluation approach as described above
- Account manager and customer service training
- Establishing requirements for supporting documentation, analysis methods, and reporting requirements on technical studies
- Completing all program procedures from marketing through verification and payment and conducting a dry-run prior to launch
- Preparing for stronger or weaker than expected participant response

Participation

Incremental Annual Participants (units installed)

Measure	Units	2009	2010	2011	Total 2009 - 2011
LED Exit	fixture	0	118	116	234
Occupancy Sensor Motion	sensor	0	1,198	1,119	2,317

Detector					
Prem Motor > 10HP	motor (per HP)	0	417	378	795
EMS System - Lighting & HVAC	contrd sq.ft (1,000s)	0	372	339	712

Budget

Incremental Annual Participant Costs (2009$)			
2009	2010	2011	Total 2009 - 2011
$0	$289,500	$266,795	$556,295

Incremental Annual Budget (2009$) - Total			
2009	2010	2011	Total 2009 - 2011
$0	$296,938	$246,016	$542,954

Incremental Annual Budget (2009$) - Incentive			
2009	2010	2011	Total 2009 - 2011
$0	$148,325	$123,152	$271,477

Incremental Annual Budget (2009$) - Administrative			
2009	2010	2011	Total 2009 - 2011
$0	$155,539	$115,938	$271,477

Savings Targets

Incremental Annual Energy Savings (Net MWh) - at Meter			
2009	2010	2011	Cumulative Total 2009 - 2011

0	1,496	1,382	2,879

Incremental Annual Summer Peak Demand Savings (MW) at Meter

2009	2010	2011	Cumulative Total 2009 - 2011
0	259	242	500

Benefit-Cost Test Results

Benefit-Cost Test	2009-2011 Benefit-Cost Test Ratio
Total Resource Cost (TRC)	1.5
Utility System Resource Cost (UCT)	2.4
Participant Cost (PCT)	3.4
Rate Impact Measure (RIM)	0.5

6.2.5 C&I Demand Response Program

AEP Ohio: C&I Demand Response Program

Objective	To encourage AEP Ohio's C&I customers to reduce overall demand on the system during the summer peak period through participation in Interruptible Tariffs upon availability.
Target Market	The C&I Demand Response program component for non-residential customers will target non-residential customers who can reduce their loads to a specific and pre-determined level during peak demand periods. For 2009 to 2011, the program will be available to Columbus Southern Power customers only, based on AEP Ohio interpretation of allowance of existing interruptible contracts.
Program Duration	The C&I Demand Response program will be an ongoing element of the program portfolio.
Program Description	The Commercial and Industrial Interruptible/Curtailable Rates program component for non-residential customers will include fixed rate discounts for non-residential customers who contract to reduce their loads to a specific and pre-determined level during peak demand periods. The current AEP Ohio Interruptible/Curtailable tariff or an approved modified offering will form the basis of this program component.[13] AEP Ohio's existing Interruptible Power Tariff that is available to non-residential customers shall continue as a part of AEP Ohio's demand response portfolio, although modification or incorporation vis-á-vis new programming may be recommended. The current program offers a discounted rate in order to compensate voluntary customer service interruption or to incite the customer to curtail load to a specified level when determined necessary by AEP Ohio. The program's actual demand and energy savings will be determined through the program evaluation.
Incentive Strategy	The Commercial and Industrial Interruptible/Curtailable Rates program component: the primary incentive is an electric rate(s) that is lower than the traditional rate paid by the non-residential customer.
Eligible Measures	Loads that can be limited during the summer peak demand period.
Implementation	The Commercial and Industrial Interruptible/Curtailable Rates program component: the primary goal of the program is to encourage AEPP Ohio's C&I

[13] The Interruptible/Curtailable Rate program component is not described in detail in this plan since it will build from AEP Ohio's current tariff offerings.

Strategy

customers to agree to reduce their electricity load to a pre-determined level during times of utility-determined system peak demand, in exchange for a discount in its electricity rates during that same period. This program component also aims to educate and raise awareness on the benefits of demand response within the non-residential customer base.

Participating customers will sign contracts committing their companies to meeting the requirements for the programs they sign up for. Customers will initiate the load reductions themselves, and customers' loads will be monitored with interval data recorders to verify that they reduced their loads to the contracted levels.

Highly targeted marketing approaches are also a vital component for an Interruptible/Curtailable Rates program in the AEP Ohio service territory. Education and promotional efforts will be aimed at AEP Ohio's major customers about the benefits of demand response programs, including educational brochures and program promotional material to be distributed by customer account representatives. The AEP Ohio web site (and the web sites of trade associations) can also be updated to provide information on the program.

Marketing Strategy

The marketing and communications strategy will be designed to inform customers of the availability and benefits of the program and how they can participate in the program. The AEP Ohio website will direct customers to information about the program. More specifically, the marketing and communications plan will include:

- Direct mail and outreach to customers and customer representatives. Marketing activities will include:
  - Brochures that describe the benefits and features of the program including program application forms and worksheets. The brochures will be mailed upon demand.
  - Targeted direct mailings used to educate customers on the benefits of the program and explaining how they can apply.
  - AEP Ohio website content providing program information resources, contact information, downloadable application forms and worksheets, and links to other relevant service and information resources.
  - Presentations by the program manager to key customers and customer groups to actively solicit their participation in the program.
- The marketing strategy will identify key customer segments and potentially geographical areas for targeted marketing, and will prepare specific outreach activities for these customers.
- AEP Ohio will design and develop the content, messaging, branding, and calls to action of all of the marketing and collateral materials used to promote the program.

Milestones

Task	Timeframe
Rate offerings designed and approved	3 months
Final Program Design and Materials Developed	6 months
Program Launch – Marketing Begins	7 months

EM&V Strategy & Requirements

All evaluation activities will be conducted by a third party contractor selected through a competitive bidding process. An integrated evaluation approach will be taken which includes addressing evaluation at the onset of program design, collecting evaluation data as part of program administration, assessing and documenting baseline conditions, establishing tracking metrics, developing and refining deemed load reduction values, as well as conducting primary and secondary research as part of impact and process evaluations.

The overall goal of the impact evaluation will be to validate/calibrate the deemed load reduction values and determine program cost-effectiveness. Self-report surveys with both participants and nonparticipants may be used to assess net impacts. The participant and nonparticipant surveys will also address program awareness, barriers to participation, participant satisfaction, and process efficiency. These surveys will be enhanced by collecting market data and assessing trends as well as interviews with program staff, vendors, manufacturers, and other trade allies.

The process evaluation will be conducted during the first program year and then coordinated with follow-on impact evaluation work to be performed once program-approved measures have been installed and operating for a sufficient time to enable a robust impact evaluation.

AEP Ohio Administrative Requirements

It is estimated that a 1.0 full-time equivalent ("FTE") will be required for program management. Designated AEP Ohio staff person(s) will provide program administration, marketing, vendor referrals, application and incentive processing, coordination of education and training activities, participation tracking and reporting, quality control, and technical support. AEP Ohio account representatives are expected to promote the program to their customers. Alternatively, AEP Ohio could outsource the program to an "implementation contractor".

AEP Ohio and its implementation contractor will follow industry best practices during final program design and start-up to ensure success, including:

- Following an integrated evaluation approach as described above
- Confirming enabling technology performance
- Account manager and customer service training
- Completing all program procedures from marketing through verification and payment and conducting a dry-run prior to launch.
- Preparing for stronger or weaker than expected participant response

Participation

Note: due to the current economic downturn, AEP Ohio is not projecting peak demand savings from the Commercial & Industrial Demand Response Program in 2009 since the 2009 SB 221 target for peak demand savings likely will be satisfied without implementing this program in 2009.

Incremental Annual Participants				
Measure	Units	2009	2010	2011
Interruptible Rates	MW	0	30.4	32.0

Incremental Annual Participant Costs (2009$)			
2009	2010	2011	Total 2009 - 2011
$0	$0	$0	$0

Budget

Incremental Annual Budget (2009$) – Total			
2009	2010	2011	Total 2009 - 2011
$0	$3,371,250	$3,434,625	$6,916,875

Incremental Annual Budget (2009$) – Incentive			
2009	2010	2011	Total 2009 - 2011
$0	$2,610,000	$2,745,000	$5,355,000

Incremental Annual Budget (2009$) – Admin & Other			
2009	2010	2011	Total 2009 - 2011
$0	$761,250	$800,625	$1,561,875

Savings Targets

The program does not yield significant energy savings, which is why these savings have not been projected.

Benefit-Cost Test Results

Incremental Annual Summer Peak Demand Savings (at Meter)		
2009	2010	2011
0	30,450	32,025

Benefit-Cost Test	2009-2011 Benefit-Cost Test Ratio
Total Resource Cost (TRC)	10.7
Utility System Resource Cost (UCT)	2.9
Participant Cost (PCT)	N/A
Rate Impact Measure (RIM)	2.5

6.3 Multi-Sector Programs

6.3.1 Renewable Energy Technology

AEP Ohio: Renewable Energy Technology Program

Objective

To reduce the net cost of on-site renewable energy systems to end-use customers in order to promote the purchase and installation of residential and commercial wind and solar photovoltaics ("PV"), thereby stimulating demand and increasing the market share of renewable energy systems. Additionally, this program will be designed to provide AEP Ohio renewable energy credits (RECs) which will be used to help satisfy its benchmark requirements under the state's Alternative Energy Portfolio Standard (AEPS).

Target Market

Residential and commercial grid-connected customers in new or existing single family and multifamily homes and duplexes, as well as commercial applications up to 100 kW.

Program Duration

The Renewable Energy Technology Program will be an ongoing element of the program portfolio.

Program Description

The AEP Ohio Renewable Energy Technology Program will provide incentives through a non-competitive application process for the installation of photovoltaic (PV) and small wind projects by professional, licensed contractors at customer facilities. The program provides consumers with a financial incentive to install renewable energy systems on their property. The financial incentive varies based on system size, technology, and type of installation and is paid once the system is installed and operational.

The renewable energy system (RES) and eligible renewable energy resource must be located on the same site where the customer's own electricity demand is located. The renewable energy system must be permanently interconnected to the electrical distribution grid of the utility serving the customer's electrical load. A second electric meter will be required and the premise must be net metered. All major system components must be new and must not have been previously placed in service in any other location or for any other application. Equipment purchased or installed more than 18 months before applying for a reservation is not eligible. All systems must be installed by a licensed contractor and must have a minimum multi-year warranty to protect the purchaser against breakdown or electrical output degradation of major system components.

The RES must become a certified Ohio Renewable Energy Generating Facility under the state's AEPS. In order to receive incentives, the customer must give title to all RECs for a period representative of the life of the RES.

Incentive Strategy

The incentives offered through this program are based on the generating capacity of a system and vary by system size, technology, and type of installation. The incentive must be used to reduce the purchase or lease cost of the eligible system, or the cost of electricity produced by the eligible system for the onsite customer.

Participants must submit an Incentive Application Form and materials to reserve an incentive before any installation work is done. Incentive applications are processed on a first-come, first-served basis as postmarked or delivered, until the total budget for the program has been expended. Participants have six months from the receipt of the Incentive Application Form to install their solar electric system and have it approved by the utility and local code officials (if necessary). A site assessment must be completed and submitted with the Application Form by a professional solar site assessor or solar contractor that indicates that the site qualifies under program.

Eligible Measures

The systems listed below have been specified for planning purposes. AEP Ohio will revise eligible measures as needed in accordance with current market conditions, technology development, EM&V results, and program implementation experience.

Measures addressed will include:

- Solar Electric Photovoltaic Panels
- Small Wind Turbines

Implementation Strategy

Key elements of the implementation strategy include:

- **Hiring and training of energy advisors for walk-through analysis.** AEP Ohio's implementation contractor will recruit and train a team of energy advisors to deliver walk-through analyses. The contractor will also develop/provide a report format for the customer and arrange competitive pricing with local contractors for the system design and installation work.
- **Captive installation contractor recruitment and training.** AEP Ohio's implementation contractor will facilitate the recruitment of renewable energy installation contractors to provide turn-key services through a competitive bid process which will be conducted on an annual basis. These contractors will be provided with training on best practices and will be subject to quality control inspections to ensure the quality of work and integrity of savings claimed.
- **Market based contractor training.** The implementation contractor will provide opportunities for any interested contractor to receive training on best practices and program terms and conditions to also

become a qualified contractor

- **Application processing.** AEP Ohio's implementation contractor will coordinate processing of all incentive applications, verification of eligibility and prompt delivery of incentive checks to customers.

Strategies to limit free ridership and promote spillover include:

- The program will charge a fee for walk-through audits to represent the value of the service and to target customers who want to take action but feel they need more information before they're able to act.
- The program will offer incentives at a sufficient level to motivate customers who would not implement improvements in the absence of the program due to the first cost barrier.

Implementation-related administrative requirements will be handled by a third-party implementation contractor, selected through a competitive bid process. The implementation contractor will be responsible for:

- Energy Advisor recruitment and training
- Walk-through analysis and report
- Marketing strategy and materials
- Field services
- Contractor/store education, training and outreach
- Incentive processing
- Assist with development of network of Home Performance providers
- Data tracking and reporting
- Budget tracking and reporting
- Contact (call) center services
- Managing public relations
- Customer satisfaction/problem resolution

Marketing Strategy

Three key marketing strategies will drive participation in the program:

- Direct mail campaign targeted to specific geographic areas
- AEP Ohio newsletter bill inserts
- Program webpage
- Press releases in targeted communities
- Mass media advertising
- Through non-captive contractors

The program will rely primarily on targeted direct mail campaign to generate participation as this strategy allows for targeting by geographic area and customer and therefore greater control of workflow than mass media efforts. It is necessary to concentrate efforts on specific geographic areas to improve efficiency by ensuring auditors do not travel further than necessary between audits. Customers may be targeted for 2-3 successive mailings to maximize close rates. Utility bill inserts, mass media

advertising, and press releases to targeted areas may be used on a limited basis to ramp up production as needed.

The program webpage and online bill analysis system will also promote the availability of the program to interested customers.

Contractors will be provided with information about the availability of the program and utility incentives through direct mail and periodic initiations to training sessions.

Milestones

Tasks	Timeframe
Selection of Program Implementation Contractor	1 months
Program materials and advertising developed and placed	2 months
Site assessment available	3 months
Financial incentives available	3 months
Program launch – marketing begins	3 months

EM&V Strategy

All evaluation activities will be conducted by a third-party contractor selected through a competitive bidding process. An integrated evaluation approach will be taken which includes: addressing evaluation at the onset of program design, collecting evaluation data as part of program administration, assessing and documenting baseline conditions, establishing tracking metrics, developing and refining deemed savings measure databases, as well as, conducting primary and secondary research as part of impact, market, and process evaluations.

The overall goal of the **impact evaluation** will be to assess the development of the market infrastructure, savings for the program measures, and program cost-effectiveness. Primary impact metrics are energy savings per unit, program/contractor participants, net-to-gross ratio and program cost-effectiveness. Energy savings will be determined by a literature and data review, billing analysis of participants compared to non-participants and conducting field research with a selected sample of participants. A baseline market survey of contractors will be conducted to determine current practices; this survey will be repeated regularly to assess changes in the market infrastructure. Self-report surveys with both participants and non-participants will be used to assess free riders/spillover and process variables such as barriers to participation, and satisfaction with the program delivery. In addition the process evaluation will interview program mangers and other trade allies to assess the delivery approach and operations. These surveys will be enhanced by collecting market data and assessing trends through secondary literature research.

The **process evaluation** will be conducted during the first program year and then coordinated with follow-on impact evaluation work to be performed once program-approved measures have been installed and operating for a sufficient time to enable a robust impact evaluation.

AEP Ohio Administrative Requirements

AEP Ohio will be responsible for general administrative oversight of the program portfolio which will require 1.0 FTE to address the following:

- Recruitment, selection, and management of the implementation contractor(s)
- Coordination of marketing strategy/public relations among programs and market sectors
- Coordination of all educational services
- Data warehousing
- Recruitment, selection, and management of the evaluation contractor
- Goal achievement within budget

Participation

Annual Participants (units of measure installed)

Measure	Units	2009	2010	2011	Total 2009 – 2011
Solar Photovoltaics	Per kW of DC Capacity	23	96	123	242

Incremental Annual Participant Costs (2009$)

2009	2010	2011	Total 2009 – 2011
$125,021	$500,001	$625,001	$1,250,022

Budget

Incremental Annual Budget (2009$) – Total

2009	2010	2011	Total 2009 – 2011
$500,084	$2,000,004	$2,500,004	$5,000,088

Incremental Annual Budget (2009$) – Incentive

2009	2010	2011	Total 2009 – 2011
$250,042	$1,000,002	$1,250,002	$2,500,004

Savings Targets

Incremental Annual Budget (2009$) – Administrative			
2009	2010	2011	Total 2009 – 2011
$250,042	$1,000,002	$1,250,002	$2,500,004

Incremental Annual Energy Savings (Net MWH) at Meter			
2009	2010	2011	Cumulative Total 2009 – 2011
108.4	426.4	523.8	1058.6

Incremental Annual Summer Peak Demand Savings (net kW) at Meter			
2009	2010	2011	Cumulative Total 2009 – 2011
29.2	115.4	143.0	287.6

Benefit-Cost Test Results

Benefit-Cost Test	2009-2011 Benefit-Cost Test Ratio
Total Resource Cost (TRC)	0.1
Utility System Resource Cost (UCT)	0.1
Participant Cost (PCT)	0.7
Rate Impact Measure (RIM)	0.1

6.3.2 Energy Education and Training Program

Objective

The Energy Education and Training program are designed to build customer awareness of energy efficiency in general as well as AEP Ohio programs to begin market transformation and build demand.

Target Market

Media outreach and advertising is primarily for the mass market, but training is targeted to larger C&I customers.

Program Duration

This Program will be directly managed by AEP Ohio and it is expected to be ongoing These new programs should have a goal of increasing the adoption of the efficiency programs as well as bringing AEP Ohio's commitment to efficiency to its customers.

Program Description

AEP Ohio will plan a media campaign and training effort to address the lack of awareness of their customer base to these new programs in a variety of ways. In addition general energy education should be a key focus. The development and distribution of targeted marketing materials and participation in promotional events should be a primary focus.

There are several barriers to the adoption of energy efficiency. In some cases it is simple lack of awareness or misinformation. In other cases, it is a lack of contractor or professional contractors to make efficiency a realistic decision choice. For other cases, many technology choices are made spur of the moment or in a fail and replace scenario where the person or contractor contacted are aware of the portfolio programs and make the efficient decision. In all cases, these programs should further AEP Ohio's commitment to efficiency and bridge the portfolio program goals and the consumer lack of adoption.

Incentive Strategy

The goals and needed incentives will vary by program supported and will be clearly stated, along with goals with regard to customers reached, people trained, items sold/given away or whatever the program's incentives and strategy call for.

Eligible Measures

Each supported program will have its own specific measures, eligibility and other measure requirements. In the Energy Education Program, the following are the measure details.