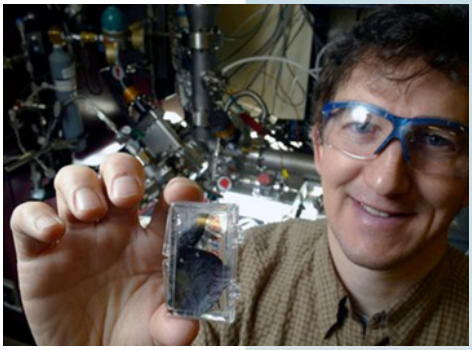
AEG Applied Energy Group

Report specifically developed for:

Ameren Illinois

Ameren ILLINOIS ActOnEnergy

August 30, 2013



Volume 4: Program Analysis

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Introduction

Background

Ameren Illinois contracted with Applied Energy Group (AEG) to provide consulting services relating to the development of a Demand-Side Management (DSM) Potential Study conducted by EnerNOC Utility Solutions (EnerNOC) covering the period of performance from June 1, 2014 through May 31, 2017. The Potential Study performance period coincides with the development of a three year plan for programs implemented by Ameren Illinois in Cycle 3. Cycle 3 DSM program design covers the period June 2014 through May 2017 per 220 ILCS Sections 5/8-103 (electric) and 220 ILCS 5/8-104 (natural gas) of the Public Utilities Act (the "Act"). Statutory annual load reductions for the period are shown in Table 1 below.

Table 1. Ameren Illinois DSM Targets, June 2014 – May 2017

Time Period	% Incremental Annual Electric Energy		% Incremental Annual Natural Gas Energy	
	kWh at Meter	% of Sales	Therms at Meter	% of Sales
6/1/2014 -5/31/2015	707,857,975	1.8%	9,030,493	0.8%
6/1/2015 -5/31/2016	800,865,681	2.0%	11,288,116	1.0%
6/1/2016 -5/31/2017	805,204,838	2.0%	13,545,739	1.2%

In addition to satisfying the requirements of Sections 8-103 and 8-104 of the Act, Ameren Illinois must also satisfy the requirements of the Illinois Power Agency (IPA) procurement process to acquire additional savings as approved by SB1652 and per 220 ILCS Section 5/16-111.5B. This legislation requires that Ameren Illinois submit a plan each year to capture the potential for achievable cost-effective savings subject to certain requirements.

The purpose of the analysis conducted by AEG was to perform preliminary program design to inform the Cycle 3 program design with the purpose of assigning costs to group of measures in EnerNOC's Program Achievable High (PAH) and Program Achievable Low (PAL) scenarios. The energy efficiency information developed will be utilized as a resource in the development of new programs for Ameren Illinois' upcoming Cycle 3 DSM filing.

AEG utilized measure-level information from the PAH and PAL scenarios provided by EnerNOC in order to group the measures into deliverable programs and assign implementation and delivery costs. Each of the measures provided by EnerNOC was designed to be cost-effective on an individual basis utilizing the measure's individual costs and savings. The measures were then grouped into programs in order to assign program costs to achieve the specified savings.[1]

[1] Programs in these scenarios are groupings of measures in order to more accurately assign administrative costs for the purpose of creating supply curves. The Programs were developed strictly for the Potential Study and are not meant to be used directly for Ameren Illinois' Plan 3 filing.

Objectives

The study analyzes cost expenditures required to achieve different levels of energy efficiency potential and informs the program design process in the following ways:

- Develops preliminary program options for electric and natural gas DSM programs implemented in Cycle 3 (2014-2017)
- Develops cost information for the PAH and PAL to feed the development of energy efficiency supply curves (developed by EnerNOC)
- Provides the total cost associated with achieving different levels of energy efficiency potential

Report Organization

This report is presented in 6 volumes as outlined below. This document is **Volume 4: Program Analysis**.

- Volume 1, Executive Summary
- Volume 2, Market Research Report
- Volume 3, Energy Efficiency Potential Analysis
- Volume 4, Program Analysis
- Volume 5, Supply Curves
- Volume 6, EE Potential Analysis Appendices

Definitions of Potential

In this study, AEG estimates the program potential for energy efficiency savings. The savings estimates represent net savings[2] developed into two of potential: program maximum achievable potential and program realistic achievable potential. Program achievable potential embodies a set of assumptions about the decisions consumers make regarding the efficiency of the equipment they purchase, the maintenance activities they undertake, the controls they use for energy-consuming equipment, and the elements of building construction. Because estimating achievable potential involves the inherent uncertainty of predicting human behaviors and responses to market conditions, we developed low and high achievable potential as boundaries for a likely range. The various levels are described below.

- **High Achievable Potential** estimates customer adoption of economic measures when delivered through efficiency programs under ideal market, implementation, and customer preference conditions. Information channels are assumed to be established and efficient for marketing, educating consumers, and coordinating with trade allies and delivery partners. High Achievable Potential establishes a maximum target for the EE savings that an administrator can hope to achieve through its EE programs and involves incentives that represent a substantial portion of the incremental cost combined with high administrative and marketing costs.
- **Low Achievable Potential** reflects expected program participation given barriers to customer acceptance, non-ideal implementation conditions, and limited program budgets. This represents a lower bound on achievable potential.

[2] Savings in "net" terms instead of "gross" terms mean that the baseline forecast does include naturally occurring efficiency. In other words, the baseline assumes that energy efficiency levels reflect that some customers are already purchasing the more efficient option. In the baseline forecast chapter we explore other types of baselines, including a codes and standards case and a business-as-usual case.

Methodology

AEG was received detailed information from EnerNOC that provided individual measure-level potential by year for each scenario (PAH and PAL). The information included the measure level savings (kWh and therms), measure incremental costs, and yearly incremental installations. AEG then grouped the measure into programs in order to assign more accurate implementation costs to each measure grouping.

Measure Allocation

Measures were grouped into fifteen separate programs in order to more accurately estimate program costs associated with implementing each program. The fifteen programs were grouped into two main sectors Residential and Commercial & Industrial. The programs the measures are grouped into are listed in Table 2.

Table 2. Programs for Measure Allocation

Sector	Program
Residential	Residential Lighting
Residential	ENERGY STAR Homes
Residential	Home Performance with ENERGY STAR
Residential	Multi Family
Residential	Moderate Income
Residential	Appliance Recycling
Residential	HVAC
Residential	Efficient Products
Residential	School Kits
C&I	Small Business Direct Install
C&I	Business
C&I	Custom
C&I	Behavior Change
C&I	Building Codes and Standards
C&I	Retro Commissioning

The development of programs was based on factors including existing Ameren Illinois Act On Energy programs, programs included in Ameren's current Illinois Power Authority (IPA) programs, and potential future programs.[3]

EnerNOC provided AEG with the gross yearly incremental installations by measure for each potential scenario. In order to distribute measure installations per program, allocation factors were used to determine the number of incremental measures installed by program per year. Each individual measure was assigned a percentage factor for each program, totaling 100 percent for each measure across all programs. The percentage factor for each measure is multiplied by the total yearly incremental measure installations to determine the

[3] Potential future programs were developed with the purpose of analysis for the Plan 3 filing. Potential programs are for consideration in Plan 3 and non-binding in that planning process.

measure installations by program. A stylistic measure allocation example for a generic measure and program is detailed below in Table 3.

Table 3. Measure Allocation Stylistic Example

Total Incremental Installations	
Existing Building CAC	1,500
New Construction CAC	500

	Measure Allocation		Program Installations	
	Existing Building CAC	New Construction CAC	Existing Building CAC	New Construction CAC
Residential Lighting	0%	0%	0	0
Res ENERGY STAR Homes	0%	85%	0	425
Res Home Performance	35%	0%	525	0
Res Multi Family	0%	0%	0	0
Res Moderate Income	2%	0%	30	0
Res Appliance Recycling	0%	0%	0	0
Res HVAC	63%	15%	945	75
Res Behavior Change	0%	0%	0	0
Res Efficient Products	0%	0%	0	0
Res School Kits	0%	0%	0	0
Total	100%	100%	1,500	500

Measure program allocations were based on participation levels in existing Act On Energy programs, and expected contributions to future programs.

Measure Installation Smoothing

EnerNOC provided AEG with the gross yearly incremental installations by measure for each potential scenario. In many cases the yearly incremental installations were unbalanced, i.e. there were large installations in the first program year and declining installations in subsequent years. In order to balance measure installations across program years for budgetary purposes, the yearly incremental installations were "smoothed" across the three program years.

Smoothing was calculated by multiplying the total incremental measure installations across all three program years by a yearly installation smoothing percentage. In cases where EnerNOC's model showed incremental installations in only specific program years (for example, installations only in years two through three because of changing codes and standards, technology availability, etc.) the smoothing algorithm only accounted for installations in those program years. Table 4 provides three stylistic examples of the smoothing algorithm applied to a generic measure given the various installation scenarios.

Table 4. Measure Smoothing Example

Scenario 1: Installations in all Three Program Years

	2014	2015	2016	Total
EnerNOC Modeling Output	20,000	5,000	6,000	31,000
Yearly Smoothing %	33%	33%	34%	100%
Incremental Yearly Installations	10,230	10,230	10,540	31,000

Scenario 2: Installations in Two Program Years

	2014	2015	2016	Total
EnerNOC Modeling Output	0	8,500	4,500	13,000
Yearly Smoothing %	0%	50%	50%	100%
Incremental Yearly Installations	0	6,500	6,500	13,000

Scenario 3: Installations in One Program Year

	2014	2015	2016	Total
EnerNOC Modeling Output	0	0	7,500	7,500
Yearly Smoothing %	0%	0%	100%	100%
Incremental Yearly Installations	0	0	7,500	7,500

Measures details by program are located in Volume 6 of this report.

Measure Removal/Reduction

Specific measures or measure types were removed or reduced from the program-level analysis due to either the realistic potential installations being too high to implement over the three program years or the measures could not be delivered through traditional Ameren Illinois programs. There were two main segments where electric measures were removed or reduced:

- **Residential Consumer Electronics:** Past program experience and evaluation has shown the consumer electronics market is extremely difficult to reach and has had limited participation.
- **Business Energy Management Systems:** The measure-level model predicts installations of Energy Management Systems for most commercial and industrial buildings in the Ameren Illinois service territory. The levels of installations were reduced to more realistic implementation levels and to control program costs (Energy Management Systems have very high costs with relatively low energy savings).

Program Cost Development

The estimates for technical, economic, and achievable potential in this report were determined by screening measure for cost-effectiveness at the measure-level. This method does not take into account the program costs of delivering measures to end-use customers. The additional costs associated with the delivery of energy efficiency measures includes: Measure Incentives, Program Administration, Education and Marketing, Implementation, and Evaluation. For budgeting and cost-effectiveness purposes the major categories are broken down into Incentives and Non-Incentives.

Program costs were calculated in order to calculate program Total Resource Cost Test (TRC) results and to provide EnerNOC with cost information in order to create energy efficiency supply curves. Program costs were broken out into five separate categories: Incentives, Program Administration, Education and Marketing, Implementation, and Evaluation. A description of each cost category is provided in Table 5.

Table 5. Program Costs Descriptions

Cost Category	Cost Definition
Incentives	Costs paid to the program participant or intermediary to offset the incremental cost of purchasing energy efficient measures.
Administration	The cost accrued to the program implementer to run the day-to-day operations of the program.
Education and Marketing	Direct and indirect marketing including print media, television, internet, and radio advertising and marketing. Education includes both customer and trade ally/contractor education.
Implementation	Direct cost to program implementer including account managers, direct install measures, rebate processing, project inspections, tracking systems, etc.
Evaluation	Cost of evaluation of the program including baseline studies, potential studies, process evaluations, and impact evaluations.

Each cost category is a derivative of a separate cost item of piece of measure information. Table 6 describes how each cost category was calculated.[4]

Table 6. Cost Development by Category

Cost Category	Calculation Methodology	Calculation Strategy
Incentives	Based on a percentage of measure incremental costs	Percentages range from 25-100% of incremental costs dependent on program implementation strategy
Administration	Based on a percentage of incentive costs	Percentages range from 5-50% of incentive costs dependent program maturity and history
Education and Marketing	Based on a percentage of incentive costs	Percentages range from 0-20% of incentive costs dependent on program maturity and history
Implementation	Based on a percentage of incentive costs	Percentages range from 0-100% of incentive costs dependent on program implementation strategy
Evaluation	Based on a percentage of total program costs	A set percentage of 3.5% of total program costs was utilized for Evaluation

[4] Detailed implementation plans and delivery methods were not designed in this process. Implementation strategies for each program were designated in order to develop cost allocation percentages.

Program Development

The purpose of program development is to group measures with similar characteristics, end uses, implementation strategies, or target markets. The development of the fifteen programs were based on a variety of factors including existing Ameren Illinois Act On Energy programs, programs included in Ameren's current Illinois Power Authority (IPA) programs, and potential future programs.[5] Each program was developed to inform the program design process for Cycle 3.

Measure Level Screening

All measures provided to AEG by EnerNOC were screened through various measures-level models[6] and were found to be cost-effective at the measure level. In total, approximately 50 unique residential measures (accounting for over 350 fuel, vintage, and segment combinations), and 150 unique commercial and industrial measures (accounting for over 2,350 sector, fuel, vintage, and segment combinations) were considered for program inclusion.

Bundling Measures into Programs

Each program is made up of individual measures where customers receive rebates for each measure based on a pre-determined incentive level (discussed in the Cost Allocation section of this report). The measure list from the PAH and PAL scenarios were used as the starting point for measure inclusions. All measures, with the exception of measures discussed in the measures removal/reduction section, were included in programs.

A program combines a number of measures into a useful delivery mechanism. Multiple measures usually are bundled within a program. A measure can also be included in multiple programs. Broad (multi-measure) programs are preferred over single-measure programs except where market segments dictate a targeted focus.

Measure categories included by program are described in Table 7 and in Table 7.

[5] Potential future programs were developed with the purpose of analysis for the Cycle 3 filing. Potential programs are for consideration in Cycle 3 and non-binding in that planning process.

[6] As described in Volume 3: Energy Efficiency Potential Analysis

Table 7. Residential Programs Measure Inclusions

Residential - High Efficiency Lighting
Energy Efficient Lighting (CFLs/LEDs)
Residential - HVAC
High Efficiency Furnaces (AFUE 90%)
Residential - Appliance Recycling
Recycled Freezer
Recycled Refrigerator
Recycled Room Air Conditioner
Residential - Home Energy Performance
Air Sealing & Insulation
Air-Source Heat Pump (SEER 16, HSPF 8.5)
Boiler Maintenance & Hot Water Reset
Central Air Conditioner (SEER 14.5+)
Combined Boiler & Water Heating Unit
Drainwater Heat Recovery
Energy Efficient Lighting (CFLs)
ENERGY STAR Windows
Faucet Aerators
Low-Flow Showerheads
Programmable Thermostats
Water Heater > 55 gal (EF 2.3)
Water Heater Desuperheater
Water Heater Solar System
Water Heater Thermostat Setback
Residential - ENERGY STAR New Homes
Air Sealing & Insulation
Air-Source Heat Pump (SEER 16, HSPF 8.5)
Boiler Maintenance & Hot Water Reset
Central Air Conditioner (SEER 14.5+)
Drainwater Heat Recovery
Energy Efficient Lighting (CFLs/LEDs)
ENERGY STAR Home Design
ENERGY STAR Windows
Faucet Aerators
Low-Flow Showerheads
Programmable Thermostats
Water Heater > 55 gal (EF 2.3)
Water Heater Desuperheater
Water Heater Solar System
Water Heater Thermostat Setback

Residential - Multifamily
Air Sealing & Insulation
Combined Boiler & Water Heating Unit
Combined Boiler & Water Heating Unit
Drainwater Heat Recovery
Energy Efficient Lighting (Specialty & Standard CFLs/LEDs)
ENERGY STAR Windows
Faucet Aerators
High Efficiency Bathroom Exhaust Fan
Home Energy Management System
Hot Water Heater > 55 gal (EF 0.95, 2.0)
Low-Flow Showerheads
Programmable Thermostats
Water Heater Desuperheater
Water Heater Solar System
Residential - Moderate Income
Air Sealing & Insulation
Air-Source Heat Pump (SEER 16, HSPF 8.5)
Ceiling Fans
Central Air Conditioner (SEER 14.5+)
Combined Boiler & Water Heating Unit
Energy Efficient Lighting (Specialty & Standard CFLs)
Faucet Aerators
High Efficiency Furnaces (AFUE 90%)
Low-Flow Showerheads
Residential - Efficient Products
Drainwater Heat Recovery
ENERGY STAR Appliances (PCs, TVs, Air Purifier, Printer/Fax/Copiers)
ENERGY STAR Windows
High Efficiency Bathroom Exhaust Fan
High Efficiency Pool Pump
Hot Water Heater > 55 gal (EF 0.95, 2.0)
Pool Pump Timer
Pool/Spa cover
Residential - School Kits
Faucet Aerators
Low-Flow Showerheads

Table 8. Commercial Programs Measure Inclusions

C&I – Standard Incentive
Air Source Heat Pump (Ductless Mini-split, EER 11.7, COP 3.4)
Air-Cooled Chiller (0.97 kw/ton, COP 3.6)
Boiler (EF .96)
Condensing Unit Heater
Energy Efficient Lighting (CLFs, LEDs, T5)
ENERGY STAR Appliances (PCs, Printer/Fax/Copiers, Steamer, Dishwasher)
Furnace (EF .96)
Geothermal Heat Pump (EER 30, COP 5.0)
Glass Door Display (6800 kWh/yr)
High Efficiency Broiler
High Efficiency Griddle
High Efficiency Multi-Speed Pool Pump
High Efficiency Range
Icemaker (5.5 kWh/100 lbs)
Non-HVAC Motors
Open Display Case (4330 kWh/yr)
Packaged Terminal Air Conditioner
Packaged Terminal Heat Pump
Pool Heater (EF .82, EF .95)
Reach-in Refrigerator (1500 kWh/yr)
Roof Top AC (Ductless Minisplit)
Variable Air Volume Ventilation
Walk-in Refrigerator (9000 kWh/yr)
C&I - Retro-Commissioning
HVAC
Lighting
C&I – Behavior Change
Heat Pump Maintenance
Fan System Maintenance & Optimization
Gas Boiler - Maintenance

C&I - Small Business Direct Install
Energy Efficient Lighting (LED, CFLs, T5)
ENERGY STAR Appliances (PCs, Printer/Fax/Copiers, Steamer, Dishwasher, Fryer)
Exhaust Hood Makeup Air
Glass Door Display (6800 kWh/yr)
High Efficiency Broiler
High Efficiency Griddle
High Efficiency Range
Icemaker (5.5 kWh/100 lbs)
Interior Lighting Controls (Daylighting, Occupancy Sensors)
LED Exit Lighting
Open Display Case (4330 kWh/yr)
Reach-in Refrigerator (1500 kWh/yr)
Walk-in Refrigerator (9000 kWh/yr)
Water Heater - Faucet Aerators
Water Heater - Low Flow Showerheads
Water Heater - Pipe Insulation
Water Heater - Pre-Rinse Spray Valve
Water Heater - Tank Blanket/Insulation
C&I – Custom Incentive
Combined Boiler & Water Heating Unit
Energy Management System
High Efficiency, Multi-Speed Pool Pump
High Reflectivity Roof
Non-HVAC Motors
Ventilation - CO2 Controlled
Water Heater - Solar System
C&I - Building Codes and Standards
Advanced New Construction Designs

Program Descriptions

Each program was designed to leverage similar technologies, delivery strategies, or target markets in order to most effectively deliver programs and measures to Ameren customers. Table 9 provides a description of each program.

Table 9. Program Descriptions

Residential Programs	
Residential - High Efficiency Lighting	Residential customers receive rebates for the purchase of qualified ENERGY STAR or other high-efficiency lighting products.
Residential - HVAC	HVAC retrofit, and replacement upgrades for air conditioners, heat pumps, and heating and cooling systems, achieving both gas and electric energy savings.
Residential - Appliance Recycling	Provides an incentive for the removal of inefficiency primary or secondary refrigerators or freezers.
Residential - Home Energy Performance	Provides a home energy audit, direct install measures, and follow up sealing and insulation measures, achieving both gas and electric energy savings.
Residential - ENERGY STAR New Homes	Incentivizes the construction of ENERGY STAR homes, achieving both gas and electric energy savings.
Residential - Multifamily	Provides installation of measures in tenant spaces and common area lighting, exit signs, and incentives for prescriptive measures installed only in multi-family settings, achieving both gas and electric energy savings.
Residential - Moderate Income (Subset of HEP)	Provides increased incentives for energy efficiency improvements and retrofits in moderate income households, achieving both gas and electric energy savings.
Residential - Efficient Products	Provides rebates for measures such as hot water heaters, window ACs, smart strips, and pool pumps.
Residential - School Kits	Distributes energy efficiency kits to customers with children in grades 5-8.
Commercial and Industrial Programs	
C&I – Standard Incentive	C&I customers receive prescriptive rebates for the installation, replacement, or retrofit of qualifying energy savings equipment.
C&I - Small Business Direct Install	AIC covers a percentage of the total project costs when small commercial customers purchase and install approved energy efficiency measures.
C&I – Custom Incentive	Applies to energy efficient measures that do not fall into the Standard Incentive program. These projects normally are complex and unique, requiring separate incentive applications and calculations of estimated energy savings, achieving both gas and electric energy savings.
C&I - Building Codes and Standards	C&I customers receive incentives for the design and construction of energy efficient certified new buildings.
C&I - Retro-Commissioning	Provides options and incentives for businesses to improve operations and maintenance practices for buildings, systems, and processes, achieving both gas and electric energy savings.

Program Delivery Mechanisms

Each program was designed with a specific delivery mechanism that is the major influence on program costs. Each program's delivery mechanism is described in Table 10.

Table 10. Program Delivery Mechanisms

Residential Programs	
Residential - High Efficiency Lighting	Offer incentives to the manufacturing and retail partners to increase sales of qualified lighting.
Residential - HVAC	Targeted marketing approach for contractor recruitment and training. Incentives will be provided mid-stream to encourage sales of energy efficiency products.
Residential - Appliance Recycling	A regional/national appliance recycling company will provide comprehensive, turnkey implementation services from eligibility verification to proper disposal/recycling of turned-in appliances. Rebates will be provided directly to program participants.
Residential - Home Energy Performance	Provides the direct installation of measures in addition to mid-stream incentives to independent contractors for follow-up measure installation.
Residential - ENERGY STAR New Homes	Delivery focuses on building a rating network, recruiting builders, providing builder training, recruiting trade allies, encouraging builders to achieve progressively better efficiency, and providing training to other market actors. Rebates will be provided directly to program participants.
Residential - Multifamily	Program consisting of two parts: 1.) Direct installation of in-unit measures; 2.) Provide incentives for common-area measures and major building measures (HVAC, motors, etc).
Residential - Moderate Income (Subset of HEP)	Provides the direct installation of measures in addition to mid-stream incentives to independent contractors for follow-up measure installation.
Residential - Efficient Products	Offer incentives to the manufacturing and retail partners to increase sales of efficient products.
Residential - School Kits	Distribute pre-packaged school kits to selected schools in the AIC service territory.
Commercial and Industrial Programs	
C&I – Standard Incentive	Due to the broad array of measures in the program delivery mechanism include end user incentives, dealer stocking programs, upstream dealer incentives, and education/evaluation programs.
C&I - Small Business Direct Install	Provides enhanced incentives to small business customers through a third partly contractor that interfaces with the customer and provides measures installation.
C&I – Custom Incentive	Implementation and installation of measures is the responsibility of the customers where they submit an application outlining potential upgrades.
C&I - Building Codes and Standards	Provides direct financial incentive to participants who utilize advanced building techniques and higher codes and standards.
C&I - Retro-Commissioning	Provides direct financial incentive to participants who complete qualified projects.

Cost Development

The estimates for technical, economic, and achievable potential in previous volumes of this report were determined by screening measure for cost-effectiveness at the measure-level. This method does not take into account the program costs of delivering measures to end-use customers. The additional costs associated with the delivery of energy efficiency measures includes: Measure Incentives, Program Administration, Education and Marketing, Implementation, and Evaluation. For budgeting and cost-effectiveness purposes the major categories are broken down into Incentives and Non-Incentives.

Utility Program Cost Assumptions

Utility program costs were developed for each program-level achievable potential scenario, with estimates of incentives and non-incentives required to achieve the related savings levels. The cost estimates were based on past program costs for Ameren Illinois, evaluations of past programs, and industry best practices.

Table 11 presents the program spending levels for each program-level achievable scenario. Also presented are Ameren Illinois' first year costs per energy saved for each scenario by fuel type. Key cost assumptions include:

- Incentives required to achieve savings ranged from 53-75% of measure incremental cost
- Non-Incentive costs required to achieve savings ranged from 23-37% of measure incremental cost
- First year electricity cost per kWh saved ranged from $0.25-0.40 per first year kWh saved
- First year natural gas cost per therm saved ranged from $3.16-4.63 per first year therm saved

Table 11. Program Cost Assumptions by Scenario

	Average Costs as Percent of Measure Cost		Average Utility cost per First-Year Unit of Energy Saved	
Achievable Scenario	Incentive	Non-Incentive	Electricity ($/kWh)	Natural Gas ($/therm)
Program Achievable Low	52%	23%	$0.25	$3.16
Program Achievable High	75%	37%	$0.40	$4.63

Table 12 shows the program incentive cost as a percentage of the measure incremental cost.

Table 12. Program Incentive Cost as a Percentage of Measure Incremental Cost

Program	PAH	PAL
Residential Lighting	75%	50%
Res ENERGY STAR Homes	75%	50%
Res Home Energy Performance	75%	50%
Res Multi Family	75%	50%
Res Moderate Income	90%	90%
Res Appliance Recycling	75%	50%
Res HVAC	70%	50%
Res Behavior Change	70%	55%
Res Efficient Products	40%	30%
Res School Kits	100%	100%
C&I Small Business Direct Install	100%	80%
C&I Business	75%	50%
C&I Custom	80%	50%
C&I Behavior Change	50%	40%
C&I Building Codes and Standards	100%	80%
C&I Retro Commissioning	75%	50%

Program Level Total Savings Potential

Electric Program-level Potential

Key findings related to program-level electric potentials are summarized as follows:

- **Program Low achievable potential.** In 2014 program low achievable savings are 341 GWh which is 0.9% of the baseline projection at a cost of $86.4 million. By 2016 cumulative realistic achievable savings grow to 992 GWh which represents 2.8% of the baseline projection at a cumulative cost of $264.9 million.
- **Program High achievable potential.** In 2014 savings for this case are 449 GWh or 1.3% of the baseline at a cost of $178.2 million. By 2016 cumulative savings reach 1,308 GWh or 3.6% of the baseline projection at a cumulative cost of $544.3.

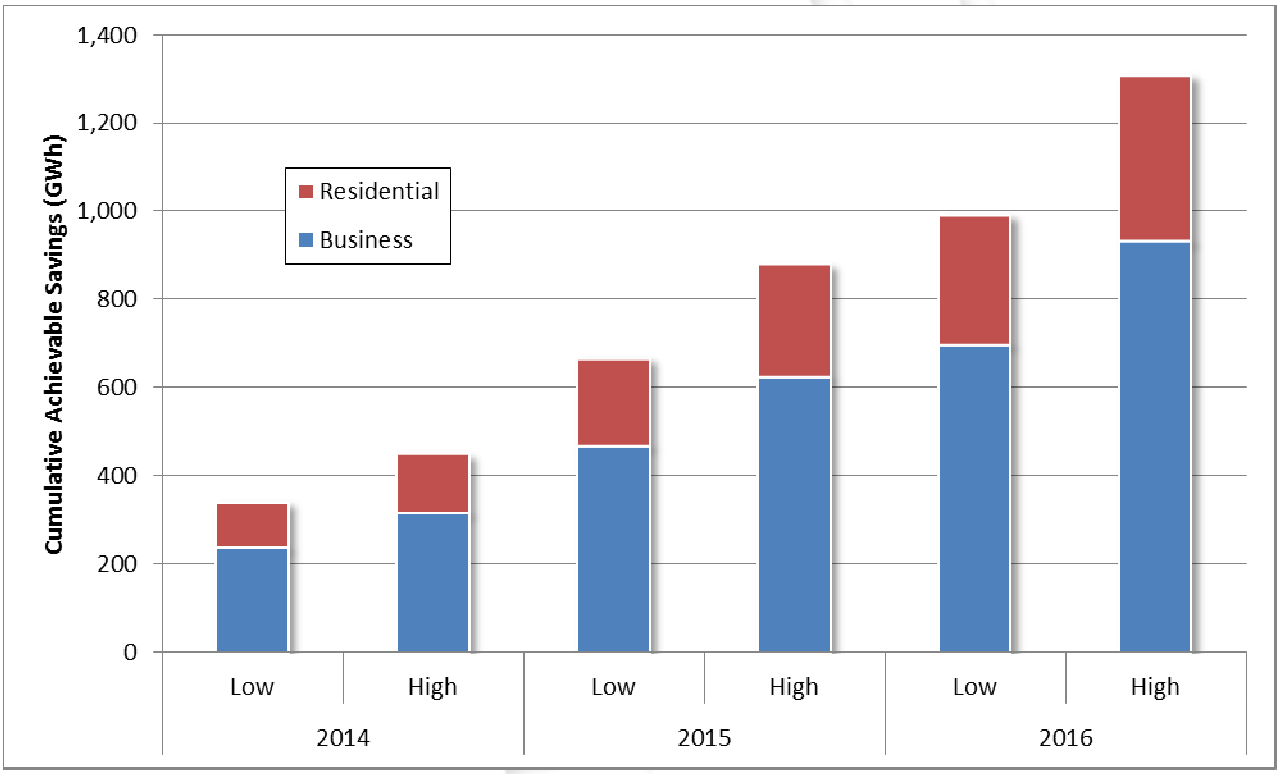
Table 13 summarizes the electric energy-efficiency savings for the different levels of potential relative to the baseline projection.

Table 13. Cumulative, Net, Program-Level Electric Energy Efficiency Potential Summary

	2014	2015	2016
Baseline Projection (GWh)	35,861	35,792	35,973
Annual Savings (GWh)			
Program Achievable Low Potential	341	667	992
Program Achievable High Potential	449	880	1,308
Energy Savings (% of Baseline)			
Program Achievable Low Potential	0.9%	1.9%	2.8%
Program Achievable High Potential	1.3%	2.5%	3.6%
Energy Costs (Million $)			
Program Achievable Low Potential	$86.4	$171.8	$264.9
Program Achievable High Potential	$178.2	$354.0	$544.3

Figure 1 summarizes the range of electric program-level achievable potential by sector. Sectors were adjusted to Residential and Business (which includes both Commercial and Industrial) to align with Ameren Illinois program sectors. The business sector accounts for the largest portion of the savings, followed by residential.

Figure 1. Cumulative, Net, Program-Level Potential by Sector (GWh)



Natural Gas Program-level Potential

Key findings related to program-level natural gas potentials are summarized as follows:

- **Program Low achievable potential.** In 2014 program low achievable savings are 4.2 million therms which is 0.4% of the baseline projection at a cost of $13.3 million. By 2016 cumulative program low achievable savings grow to 12.5 million therms or 1.1% of the baseline projection at a cumulative cost of $40.7 million.
- **Program High achievable potential.** In 2014 savings for this case are 6.3 million therms or 0.6% of the baseline at a cost of $28.9 million. By 2016 cumulative savings reach 18.7 million therms or 1.7% of the baseline projection at a cumulative cost of $89.0 million.

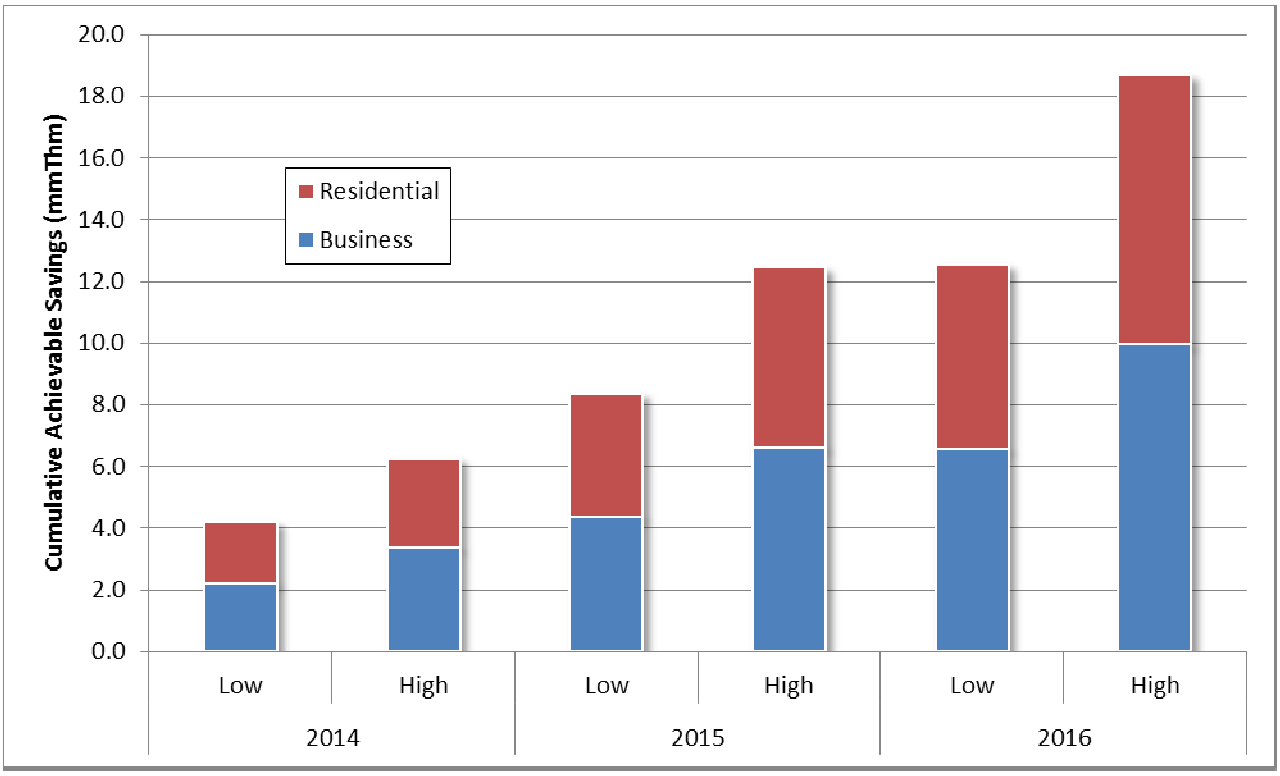
Table 14 summarizes the electric energy-efficiency savings for the different levels of potential relative to the baseline projection.

Table 14. Cumulative, Net, Program-Level Natural Gas Energy Efficiency Potential Summary

	2014	2015	2016
Baseline Energy Forecasts (million therms)	**1,102**	**1,109**	**1,109**
Annual Savings (million therms)			
Program Low Potential	4.2	8.3	12.5
Program High Potential	6.3	12.5	18.7
Energy Savings (% of Baseline)			
Program Low Potential	0.4%	0.8%	1.1%
Program High Potential	0.6%	1.1%	1.7%
Energy Costs (Million $)			
Program Low Potential	$13.3	$26.6	$40.7
Program High Potential	$28.9	$58.1	$89.0

Figure 2 summarizes the range of natural gas program-level achievable potential by sector. Sectors were adjusted to Residential and Business (which includes both Commercial and Industrial) to align with Ameren Illinois program sectors. The business sector accounts for the largest portion of the savings, followed by residential.

Figure 2. Cumulative, Net, Program-Level Potential by Sector (mmTherms)



Program Achievable High Scenario Program Level Savings Potential

Table 15 and Table 16 summarize the high scenario total potential savings achievable through residential and commercial programs, respectively.

Table 15. PAH Program-Level Potential Savings, Residential Programs

Program	Savings Category	2014	2015	2016	Total
Lighting	kWh	69,015,967	64,062,114	63,335,527	196,413,607
	kW	4,651	4,317	4,268	13,236
	therms	0	0	0	0
ENERGY STAR Homes	kWh	855,992	816,584	808,669	2,481,246
	kW	288	314	312	914
	Therms	41,889	54,441	54,398	150,728
Home Energy Performance	kWh	21,736,894	20,726,854	20,527,468	62,991,217
	kW	9,405	9,105	8,956	27,466
	therms	1,653,764	1,630,282	1,613,481	4,897,526
Multi Family	kWh	11,179,713	10,609,052	10,310,731	32,099,495
	kW	1,964	1,884	1,842	5,690
	therms	388,094	384,215	380,694	1,153,003
Moderate Income	kWh	860,366	807,134	801,945	2,469,444
	kW	116	110	108	335
	therms	23,476	23,121	22,946	69,543
Appliance Recycling	kWh	11,417,027	10,633,333	10,230,219	32,280,579
	kW	5,059	4,820	4,725	14,604
	therms	0	0	0	0
HVAC	kWh	1,460,541	1,250,925	1,192,455	3,903,921
	kW	222	161	142	525
	therms	345,733	414,767	413,241	1,173,741
Behavior Change	kWh	0	0	0	0
	kW	0	0	0	0
	therms	0	0	0	0
Efficient Products	kWh	14,349,391	13,821,377	13,973,198	42,143,965
	kW	3,049	2,939	2,919	8,907
	therms	399,155	390,987	388,122	1,178,264
School Kits	kWh	700,338	671,548	666,088	2,037,974
	kW	51	49	49	149
	therms	35,730	34,878	34,596	105,204
Total	**kWh**	**131,576,229**	**123,398,921**	**121,846,299**	**376,821,449**
	kW	**24,804**	**23,700**	**23,322**	**71,826**
	therms	**2,887,841**	**2,932,691**	**2,907,478**	**8,728,010**

Table 16. PAH Program-Level Potential Savings, Commercial Programs

Program	Savings Category	2014	2015	2016	Total
Small Business Direct Install	kWh	36,609,731	34,541,059	34,146,603	105,297,392
	kW	4,316	4,091	4,010	12,418
	therms	90,829	88,719	88,300	267,848
Business	kWh	205,544,055	198,538,685	198,623,108	602,705,848
	kW	39,206	37,969	37,974	115,149
	therms	2,748,868	2,668,685	2,703,553	8,121,107
C&I Custom	kWh	66,402,578	64,263,532	64,374,939	195,041,049
	kW	11,964	11,576	11,596	35,136
	therms	382,956	369,147	398,785	1,150,888
C&I Behavior Change	kWh	1,481,618	1,431,057	1,439,390	4,352,065
	kW	298	286	286	870
	therms	10,795	10,451	10,462	31,709
Building Codes and Standards	kWh	1,857,277	1,792,779	1,784,260	5,434,315
	kW	1,213	1,173	1,169	3,556
	therms	0	0	0	0
Retro Commissioning	kWh	5,891,128	6,386,065	6,492,389	18,769,582
	kW	610	586	586	1,781
	therms	129,467	123,110	122,125	374,701
Total	**kWh**	**317,786,387**	**306,953,177**	**306,860,689**	**931,600,252**
	kW	**57,607**	**55,682**	**55,621**	**168,910**
	therms	**3,362,915**	**3,260,112**	**3,323,225**	**9,946,252**

Program Achievable Low Scenario Program Level Savings Potential

Table 17 and Table 18 summarize the low scenario total potential savings achievable through residential and commercial programs, respectively.

Table 17. PAL Program-Level Potential Savings, Residential Programs

Program	Savings Category	2014	2015	2016	Total
Lighting	kWh	57,343,865	53,225,965	52,622,230	163,192,060
	kW	3,864	3,587	3,546	10,997
	therms	0	0	0	0
ENERGY STAR Homes	kWh	640,865	609,402	603,623	1,853,890
	kW	194	210	209	613
	therms	28,843	37,161	37,177	103,181
Home Energy Performance	kWh	16,202,775	15,422,347	15,281,959	46,907,081
	kW	6,367	6,160	6,062	18,588
	therms	1,140,693	1,123,877	1,112,272	3,376,843
Multi Family	kWh	8,457,496	8,001,353	7,760,803	24,219,653
	kW	1,339	1,282	1,252	3,873
	therms	263,635	260,879	258,477	782,990
Moderate Income	kWh	689,690	646,413	642,439	1,978,542
	kW	85	81	80	246
	therms	16,373	16,119	15,999	48,491
Appliance Recycling	kWh	8,890,889	8,278,319	7,962,649	25,131,857
	kW	3,862	3,679	3,606	11,147
	therms	0	0	0	0
HVAC	kWh	1,091,506	933,310	889,124	2,913,939
	kW	167	122	108	397
	therms	242,357	287,549	286,434	816,341
Behavior Change	kWh	0	0	0	0
	kW	0	0	0	0
	therms	0	0	0	0
Efficient Products	kWh	8,692,591	8,368,082	8,456,789	25,517,462
	kW	1,812	1,748	1,737	5,296
	therms	254,658	249,426	247,588	751,673
School Kits	kWh	514,455	493,033	489,221	1,496,709
	kW	38	36	36	109
	therms	25,744	25,130	24,926	75,800
Total	**kWh**	**102,524,130**	**95,978,226**	**94,708,837**	**293,211,193**
	kW	**17,728**	**16,904**	**16,634**	**51,267**
	therms	**1,972,303**	**2,000,142**	**1,982,873**	**5,955,317**

Table 18. PAL Program-Level Potential Savings, Commercial Programs

Program	Savings Category	2014	2015	2016	Total
Small Business Direct Install	kWh	26,524,224	25,066,739	24,847,523	76,438,487
	kW	3,137	2,979	2,924	9,040
	therms	67,513	65,945	65,634	199,092
Business	kWh	150,996,454	146,026,411	146,218,155	443,241,020
	kW	26,543	25,752	25,762	78,056
	therms	1,770,417	1,714,594	1,739,474	5,224,485
C&I Custom	kWh	53,237,979	51,535,910	51,637,331	156,411,219
	kW	8,986	8,692	8,702	26,381
	therms	273,670	261,266	284,201	819,136
C&I Behavior Change	kWh	1,178,613	1,138,869	1,146,181	3,463,663
	kW	203	195	196	594
	therms	5,834	5,599	5,567	17,000
Building Codes and Standards	kWh	1,548,931	1,495,135	1,488,023	4,532,088
	kW	1,012	979	975	2,966
	therms	0	0	0	0
Retro Commissioning	kWh	4,566,641	4,902,969	4,975,782	14,445,392
	kW	508	488	488	1,483
	therms	107,913	102,635	101,844	312,392
Total	**kWh**	**238,052,842**	**230,166,033**	**230,312,994**	**698,531,869**
	kW	**40,388**	**39,085**	**39,047**	**118,519**
	therms	**2,225,348**	**2,150,039**	**2,196,719**	**6,572,106**

Costs to Achieve Program Potential

The costs associated with achieving energy efficiency potential are broken down into Incentive and Non-Incentive (Administration, Marketing, Delivery, and Evaluation) costs. The costs to achieve the electric and natural gas program-level potential are detailed in Table 19 and Table 20.

Total Program costs were calculated for both the PAH and PAL scenarios using the methodology described in the Cost Allocations section. The program costs are presented in two main categories: incentives and non-incentives. Non-incentive costs include all costs associated with running the program including administration, marketing, implementation, and evaluation.

Table 19. Cost to Achieve Electric Program-Level Achievable Savings, Portfolio

	2014	2015	2016
Incentive Costs			
Program Achievable Low	$59,429,878	$58,898,918	$64,662,372
Program Achievable High	$118,549,915	$117,232,208	$127,827,355
Non-Incentive Costs			
Program Achievable Low	$27,015,797	$26,543,492	$28,380,775
Program Achievable High	$59,690,137	$58,584,466	$62,454,870
Total Utility Costs			
Program Achievable Low	**$86,445,675**	**$85,442,410**	**$93,043,147**
Program Achievable High	**$178,240,052**	**$175,816,674**	**$190,282,224**

Table 20. Cost to Achieve Gas Program-Level Achievable Savings, Portfolio

	2014	2015	2016
Incentive Costs			
Program Achievable Low	$9,510,317	$9,576,566	$10,093,826
Program Achievable High	$19,740,073	$19,907,091	$21,227,937
Non-Incentive Costs			
Program Achievable Low	$3,771,990	$3,797,531	$3,930,407
Program Achievable High	$9,203,424	$9,274,397	$9,654,207
Total Utility Costs			
Program Achievable Low	**$13,282,307**	**$13,374,097**	**$14,024,233**
Program Achievable High	**$28,943,497**	**$29,181,488**	**$30,882,143**

Program Achievable High Program Level Costs

Table 21 and Table 22 summarize the costs associated with the Program Achievable High Scenario for both residential and commercial programs, respectively.

Table 21. PAH Total Utility Costs, Residential Programs

Program	Cost Category	2014	2015	2016	Total
Lighting	Incentive Costs	$5,930,637	$5,757,268	$5,721,176	$17,409,081
	Non-Incentive Costs	$5,370,192	$5,213,206	$5,180,525	$15,763,923
	Utility Costs	$11,300,829	$10,970,474	$10,901,700	$33,173,003
ENERGY STAR Homes	Incentive Costs	$473,211	$587,281	$591,910	$1,652,401
	Non-Incentive Costs	$428,492	$531,783	$535,975	$1,496,249
	Utility Costs	$901,703	$1,119,063	$1,127,885	$3,148,651
Home Performance	Incentive Costs	$19,640,425	$19,416,533	$19,420,026	$58,476,985
	Non-Incentive Costs	$12,423,551	$12,281,928	$12,284,137	$36,989,617
	Utility Costs	$32,063,977	$31,698,462	$31,704,163	$95,466,601
Multi Family	Incentive Costs	$4,894,280	$4,850,954	$4,846,910	$14,592,144
	Non-Incentive Costs	$2,339,711	$2,318,999	$2,317,065	$6,975,774
	Utility Costs	$7,233,990	$7,169,953	$7,163,975	$21,567,918
Moderate Income	Incentive Costs	$0	$0	$0	$0
	Non-Incentive Costs	$597,615	$585,984	$585,984	$1,769,582
	Utility Costs	$597,615	$585,984	$585,984	$1,769,582
Appliance Recycling	Incentive Costs	$2,309,486	$2,241,560	$2,241,560	$6,792,606
	Non-Incentive Costs	$3,280,625	$3,184,136	$3,184,136	$9,648,897
	Utility Costs	$5,590,111	$5,425,696	$5,425,696	$16,441,503
HVAC	Incentive Costs	$1,674,203	$1,742,411	$1,742,411	$5,159,025
	Non-Incentive Costs	$541,688	$563,757	$563,757	$1,669,203
	Utility Costs	$2,215,891	$2,306,168	$2,306,168	$6,828,228
Efficient Products	Incentive Costs	$0	$0	$0	$0
	Non-Incentive Costs	$0	$0	$0	$0
	Utility Costs	$0	$0	$0	$0
School Kits	Incentive Costs	$1,423,156	$1,388,046	$1,497,738	$4,308,940
	Non-Incentive Costs	$2,050,910	$2,000,313	$2,158,390	$6,209,613
	Utility Costs	$3,474,066	$3,388,359	$3,656,127	$10,518,553
Total	**Incentive Costs**	**$36,345,398**	**$35,984,054**	**$36,061,730**	**$108,391,182**
	Non-Incentive Costs	**$27,032,784**	**$26,680,106**	**$26,809,968**	**$80,522,858**
	Utility Costs	**$63,378,182**	**$62,664,159**	**$62,871,698**	**$188,914,040**

Table 22. PAH Total Utility Costs, Commercial Programs

Program	Cost Category	2014	2015	2016	Total
Small Business Direct Install	Incentive Costs	$12,916,365	$12,201,033	$12,738,743	$37,856,141
	Non-Incentive Costs	$10,831,018	$10,231,176	$10,682,073	$31,744,267
	Utility Costs	$23,747,383	$22,432,208	$23,420,816	$69,600,408
Business	Incentive Costs	$59,666,672	$60,078,533	$70,712,779	$190,457,984
	Non-Incentive Costs	$19,305,152	$19,438,410	$22,879,120	$61,622,681
	Utility Costs	$78,971,824	$79,516,943	$93,591,898	$252,080,665
Custom	Incentive Costs	$20,517,969	$20,032,197	$20,643,976	$61,194,142
	Non-Incentive Costs	$7,061,259	$6,894,081	$7,104,624	$21,059,964
	Utility Costs	$27,579,228	$26,926,278	$27,748,600	$82,254,106
Behavior Change	Incentive Costs	$77,790	$75,181	$75,650	$228,620
	Non-Incentive Costs	$114,506	$110,666	$111,357	$336,529
	Utility Costs	$192,296	$185,846	$187,007	$565,149
Building Codes and Standards	Incentive Costs	$512,155	$497,092	$497,092	$1,506,339
	Non-Incentive Costs	$1,703,429	$1,653,328	$1,653,328	$5,010,084
	Utility Costs	$2,215,584	$2,150,420	$2,150,420	$6,516,424
Retro Commissioning	Incentive Costs	$8,253,639	$8,271,209	$8,325,322	$24,850,170
	Non-Incentive Costs	$2,670,465	$2,676,150	$2,693,658	$8,040,272
	Utility Costs	$10,924,104	$10,947,358	$11,018,980	$32,890,442
Total	**Incentive Costs**	**$101,944,590**	**$101,155,244**	**$112,993,561**	**$316,093,396**
	Non-Incentive Costs	**$41,685,829**	**$41,003,809**	**$45,124,159**	**$127,813,797**
	Utility Costs	**$143,630,419**	**$142,159,054**	**$158,117,721**	**$443,907,193**

PAL Program Level Costs

Table 23 and Table 24 summarize the costs associated with the Program Achievable Low Scenario for both residential and commercial programs, respectively.

Table 23. PAL Total Utility Costs, Residential Programs

Program	Cost Category	2014	2015	2016	Total
Lighting	Incentive Costs	$3,789,370	$3,678,270	$3,666,285	$11,133,925
	Non-Incentive Costs	$3,158,061	$3,065,471	$3,055,482	$9,279,013
	Utility Costs	$6,947,431	$6,743,741	$6,721,766	$20,412,938
ENERGY STAR Homes	Incentive Costs	$217,892	$266,796	$268,841	$753,529
	Non-Incentive Costs	$174,858	$214,104	$215,745	$604,707
	Utility Costs	$392,750	$480,899	$484,586	$1,358,235
Home Performance	Incentive Costs	$8,839,058	$8,729,682	$8,731,225	$26,299,965
	Non-Incentive Costs	$4,680,723	$4,622,803	$4,623,620	$13,927,147
	Utility Costs	$13,519,782	$13,352,485	$13,354,845	$40,227,112
Multi Family	Incentive Costs	$2,210,206	$2,192,593	$2,191,924	$6,594,723
	Non-Incentive Costs	$897,233	$890,083	$889,811	$2,677,128
	Utility Costs	$3,107,440	$3,082,676	$3,081,735	$9,271,851
Moderate Income	Incentive Costs	$0	$0	$0	$0
	Non-Incentive Costs	$238,350	$233,630	$233,630	$705,610
	Utility Costs	$238,350	$233,630	$233,630	$705,610
Appliance Recycling	Incentive Costs	$1,205,208	$1,169,760	$1,169,760	$3,544,728
	Non-Incentive Costs	$1,476,138	$1,432,722	$1,432,722	$4,341,583
	Utility Costs	$2,681,346	$2,602,483	$2,602,483	$7,886,311
HVAC	Incentive Costs	$848,187	$859,704	$859,704	$2,567,595
	Non-Incentive Costs	$239,486	$242,737	$242,737	$724,960
	Utility Costs	$1,087,672	$1,102,441	$1,102,441	$3,292,555
Efficient Products	Incentive Costs	$669,097	$652,463	$701,945	$2,023,505
	Non-Incentive Costs	$906,345	$883,813	$950,841	$2,741,000
	Utility Costs	$1,575,442	$1,536,277	$1,652,787	$4,764,505
School Kits	Incentive Costs	$0	$0	$0	$0
	Non-Incentive Costs	$121,939	$121,939	$121,939	$365,817
	Utility Costs	$121,939	$121,939	$121,939	$365,817
Total	**Incentive Costs**	**$17,779,018**	**$17,549,268**	**$17,589,684**	**$52,917,970**
	Non-Incentive Costs	**$11,893,133**	**$11,707,303**	**$11,766,529**	**$35,366,965**
	Utility Costs	**$29,672,151**	**$29,256,571**	**$29,356,213**	**$88,284,935**

Table 24. PAL Total Utility Costs, Commercial Programs

Program	Cost Category	2014	2015	2016	Total
Small Business Direct Install	Incentive Costs	$7,451,121	$7,074,786	$7,426,176	$21,952,083
	Non-Incentive Costs	$5,173,686	$4,912,378	$5,156,365	$15,242,429
	Utility Costs	$12,624,807	$11,987,164	$12,582,542	$37,194,512
Business	Incentive Costs	$28,132,600	$28,538,632	$34,167,145	$90,838,377
	Non-Incentive Costs	$7,943,240	$8,057,883	$9,647,093	$25,648,216
	Utility Costs	$36,075,840	$36,596,515	$43,814,238	$116,486,593
Custom	Incentive Costs	$10,583,871	$10,349,566	$10,584,759	$31,518,196
	Non-Incentive Costs	$3,162,778	$3,092,761	$3,163,044	$9,418,583
	Utility Costs	$13,746,649	$13,442,327	$13,747,803	$40,936,779
Behavior Change	Incentive Costs	$49,380	$47,713	$48,015	$145,107
	Non-Incentive Costs	$68,618	$66,301	$66,722	$201,641
	Utility Costs	$117,998	$114,014	$114,737	$346,748
Building Codes and Standards	Incentive Costs	$427,086	$414,525	$414,525	$1,256,135
	Non-Incentive Costs	$1,270,923	$1,233,543	$1,233,543	$3,738,008
	Utility Costs	$1,698,009	$1,648,067	$1,648,067	$4,994,144
Retro Commissioning	Incentive Costs	$4,517,120	$4,500,994	$4,525,894	$13,544,008
	Non-Incentive Costs	$1,275,409	$1,270,856	$1,277,886	$3,824,151
	Utility Costs	$5,792,529	$5,771,849	$5,803,780	$17,368,158
Total	**Incentive Costs**	**$51,161,177**	**$50,926,215**	**$57,166,514**	**$159,253,907**
	Non-Incentive Costs	**$18,894,653**	**$18,633,721**	**$20,544,653**	**$58,073,027**
	Utility Costs	**$70,055,830**	**$69,559,936**	**$77,711,167**	**$217,326,934**

Program Cost-Effectiveness

After the initial measure groupings, programs were evaluated for cost-effectiveness, with a Total Resource Cost Test (TRC) result of greater than 1.0 being the threshold. Measure inclusions by program were then adjusted in order for each program to have a TRC ratio greater than 1.0. Table 25 and Table 26 present the cost effective results for both the PAH and the PAL scenarios.

Program Achievable High Cost-Effectiveness Results

Table 25 presents the cost-effectiveness results for the Program Achievable High scenario.

Table 25. Program Achievable High Scenario TRC Results

Residential Programs	Electric	Natural Gas	Total
Lighting	2.36	N/A	2.36
ENERGY STAR Homes	1.09	0.96	1.05
Home Performance	0.86	0.91	0.88
Multi Family	0.86	2.36	1.07
Moderate Income	1.17	0.51	0.84
Appliance Recycling	0.72	N/A	0.72
HVAC	0.86	1.31	1.14
Efficient Products	1.34	1.69	1.38
School Kits	2.43	1.70	2.11
Commercial Programs	Electric	Natural Gas	Total
Small Business Direct Install	1.08	3.97	1.10
Business	1.75	1.34	1.71
C&I Custom	1.30	1.06	1.28
C&I Behavior Change	3.97	1.36	3.86
Building Codes and Standards	2.87	N/A	2.87
Retro Commissioning	0.67	0.27	0.50
Portfolio Total	Electric	Natural Gas	Total
Portfolio Total	**1.41**	**1.04**	**1.35**

Program Achievable Low Cost-Effectiveness Results

Table 26 presents the cost-effectiveness results for the Program Achievable High scenario.

Table 26. Program Achievable Low Scenario TRC Results

Residential Programs	Electric	Natural Gas	Total
Lighting	3.09	N/A	3.09
ENERGY STAR Homes	1.32	1.16	1.27
Home Performance	1.04	1.08	1.06
Multi Family	1.02	2.69	1.25
Moderate Income	2.12	0.91	1.55
Appliance Recycling	0.92	N/A	0.92
HVAC	0.93	1.42	1.22
Efficient Products	1.46	1.92	1.50
School Kits	2.52	1.74	2.17
Commercial Programs	Electric	Natural Gas	Total
Small Business Direct Install	1.26	4.69	1.28
Business	1.89	1.39	1.83
C&I Custom	1.40	1.17	1.39
C&I Behavior Change	3.94	1.51	3.87
Building Codes and Standards	3.20	N/A	3.20
Retro Commissioning	0.74	0.29	0.55
Portfolio Total	Electric	Natural Gas	Total
Portfolio Total	**1.57**	**1.13**	**1.51**