



PNM
Energy Efficiency
Program

2015
Annual Report

Public Service Company of New Mexico (PNM)

April 15, 2016

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Introduction

PNM submits this annual report on the performance of the PNM Energy Efficiency and Load Management Program for calendar year 2015 (“2015 Program”). This annual report is based on the measurement and verification of PNM’s 2015 programs performed by ADM Associates, Inc. (“ADM”). The Evaluation of 2015 Public Service Company of New Mexico Energy Efficiency & Demand Response Portfolio (“M&V Report”) prepared by ADM is submitted as a separate document.

The programs evaluated in this annual report were all approved by the New Mexico Public Regulation Commission (“NMPRC” or “Commission”) in Case No. 14-00310-UT. This report covers all costs incurred in the implementation of the programs and all customer participation in the programs from January 1, 2015 through December 31, 2015.

The following programs are included in this annual report:

- (1) Commercial Comprehensive
- (2) Residential Comprehensive
- (3) Residential Lighting
- (4) Multifamily
- (5) Refrigerator Replacement and CFL Installation
- (6) PNM Home Works
- (7) Home Energy Reports
- (8) Easy Savings Kit
- (9) The Power Saver load management program
- (10) The Peak Saver load management program
- (11) Market Transformation
- (12) Self-Direct

Program Results Summary

This is the eighth annual report on PNM’s Energy Efficiency Programs. Results are based upon independent measurement and verification. The following is a short summary of the overall results:

- The 2015 Program was cost effective as measured by the Utility Cost Test (“UCT”), which was 1.81 for the portfolio of programs.

- The total annual net savings after free rider and other adjustments were accounted for was 79.3 GWh at the customer meter, or 84.8 GWh including system losses.
- The two load management programs represent a total capacity of approximately 59 MW.
- Total program expenses were about 24.3 million dollars.
- The average cost per kWh of lifetime energy savings from the energy efficiency programs, not including load management, was 2.4¢/kWh.

Table 1 shows the total number of customer participants (or units), the annual energy and demand savings, the lifetime energy savings, and the total costs for each of the programs for calendar year 2015. The Residential Comprehensive program includes the four component programs which are highlighted in the table. A similar table can be found on page A-1 of the M&V Report.

Table 1

Program	Participants or Units	Annual Savings (kWh)	Annual Savings (kW)	Lifetime Savings (kWh)	Total Program Costs
Residential Comprehensive	13,534	9,408,687	3,795	85,308,694	\$ 5,266,022
<i>Residential Cooling</i>	3,212	2,336,902	2,337	34,668,354	
<i>Home Energy Checkup</i>	1,584	583,204	74	5,927,875	
<i>LI Home Energy Checkup</i>	1,145	1,286,825	117	19,343,634	
<i>Refrigerator Recycling</i>	7,593	5,201,756	1,268	25,368,831	
Residential Lighting	1,124,914	21,023,357	2,615	190,713,527	\$ 2,510,018
Multifamily	2	15,182	-	136,638	\$ 384,039
Commercial Comprehensive	1,132	35,751,066	4,413	391,354,587	\$ 7,049,168
Easy Savings	7,199	1,334,119	93	20,943,292	\$ 467,762
Refrigerator & CFL Replacement	3,648	245,377	38	3,397,407	\$ 154,124
Home Energy Reports	56,171	9,131,923	1,035	9,131,923	\$ 564,190
PNM Home Works	5,810	790,741	87	8,540,003	\$ 233,676
Large Customer Self-Direct	3	187,429	34	2,811,435	\$ -
PNM Power Saver	45,541	580,762	42,220	580,762	\$ 5,578,276
PNM Peak Saver	103	811,680	17,198	811,680	\$ 1,666,340
Market Transformation	-	-	-	-	\$ 405,220
Total	1,258,057	79,280,322	71,529	713,729,948	\$ 24,278,835

Program Information

Commercial Comprehensive

PNM contracted with DNV-GL, Inc. (formerly KEMA) to implement the Commercial Comprehensive energy efficiency program, which is comprised of five sub-programs: New Construction program, Retrofit Rebates program, Building Tune-Up program (focusing primarily on large businesses), Quick Saver small business program and Distributor Discount (midstream) program.

The **New Construction** and **Retrofit Rebates programs** offer pre-set and custom incentives for installing qualifying equipment in new and existing buildings, and implementing efficient designs in new buildings. In 2015, eligible equipment included energy efficient lighting, HVAC, refrigeration, food service equipment, motors and variable speed drives, window film and plug load controls. The **Building Tune-Up program** offers incentives for building owners and operators to improve whole-system building efficiency through retro-commissioning, to do advanced tune-ups of air conditioning systems, and to support building operator certification training. In the PNM **Distributor Discount program**, launched in July 2015, a participating distributor sells high-efficiency equipment from an approved product list to an eligible PNM customer; the customer receives an instant discount at the point of purchase, and PNM pays the rebate directly to the distributor.

In 2015, there were 810 customer projects in the New Construction, Retrofit Rebate, Building Tune-Up and Distributor Discount programs. The projects completed at these customers' facilities resulted in over \$2,643,500 in rebates paid.

PNM **Quick Saver** is a direct-install program for small business customers who have an annual peak electric demand of 150 kW or less. It offers business customers pre-set incentives for installing qualifying lighting products and refrigeration in existing buildings. In 2015, the program focused on continuing to train participating contractors for continued and successful program implementation. More than \$1,557,000 in incentives was paid on 322 customer projects.

Residential Comprehensive

Refrigerator Recycling: JACO Environmental, Inc., the third-party contractor utilized for the Refrigerator Recycling program, operated a recycling center in Albuquerque through November 23, 2015. The facility disassembled all of the refrigerators and freezers collected through the program. Unfortunately, JACO declared bankruptcy in November and closed its doors abruptly. PNM stepped in quickly to ensure that all participants received their rebate checks. The program was suspended temporarily; however, the program resumed operations in April 2016 under a new third-party contractor. Although its abrupt suspension caused disruption, the program was still very successful in 2015 with 7,668 units recycled.

Home Energy Checkup: 2,729 Home Energy Checkups were completed throughout PNM's service territory in 2015, 1,145 of which were for income-qualified customers. PNM customers pay a \$40 fee for a Home Energy Assessor to come to their home and complete a walk through energy assessment. The assessor installs a selection of direct install measures that the home might require, including CFLs and LEDs, a programmable thermostat, a low-flow showerhead, and faucet aerators. The assessor also visually inspects the home's windows and level of insulation and makes recommendations for the resident's benefit. In addition to this, the assessor reviews the age and condition of the existing refrigerator, dishwasher, and clothes washer in the home, and educates the PNM customer about rebates that are available for replacing these qualified appliances. For income-qualified customers the \$40 program fee is waived and customers could qualify for a new ENERGY STAR refrigerator to replace an older, inefficient model. In 2015, 891 refrigerators were replaced as part of this program. PNM issued a Request for Proposal to select a new implementation contractor for the program in the fall of 2015. ICF Resources, LLC was selected to take over the program at the start of 2016.

Residential Cooling: This component offers rebates on the purchase and installation of advanced evaporative coolers, high efficiency air source heat pumps, ENERGY STAR room air conditioners, high efficiency refrigerated air conditioners, and ENERGY STAR variable speed pool pumps. The program was very successful, and paid rebates on 3,212 coolers and pool pumps. PNM promoted this program largely through point-of-purchase materials at big-box stores and pool supply stores, and also conducted outreach to contractors who install the various technologies.

Residential Lighting

In 2015, the Residential Lighting program provided rebates for 1,124,914 LED and CFL bulbs. LED sales as a percentage of total rebates increased significantly from the 7% reported in 2014. CFLs accounted for 71% of sales through the program and LEDs comprised 29% of overall bulb sales. There were a total of 160 participating retail stores in the Residential Lighting program throughout 2015, comprised of 20 different retail chains and stores that offered the markdown rebates. Participating retailers included large home improvement stores, warehouse clubs, discount retailers, drug stores, and independent hardware stores throughout the PNM service territory. The average incentive was \$1.55 per bulb, with CFL incentives averaging \$0.93 per bulb and LED incentives averaging \$3.07 per bulb.

Each participating retailer displayed point-of-purchase (“POP”) materials describing the benefits of LEDs and CFLs, the different options available and information on the discounts provided by the program. Residential Lighting program field representatives provided participating stores with collateral and point-of-sale materials, and completed over 2,000 store visits. They also organized retailer training sessions and conducted outreach events throughout the year, including several school and community events.

Multifamily

The Multifamily program is the newest PNM energy efficiency program, which began in the spring of 2015. The program is designed to meet the needs of the hard-to-reach multifamily customer segment through offering an attractive mix of low-cost direct install measures, such as lighting replacement, along with deeper savings measures, such as upgrades to cooling equipment, all in one package. The program made significant progress in reaching numerous property owners in 2015 and in scheduling retrofits. However, the timeline for completing multifamily projects can be long due to the often complex management decision making and logistical constraints associated with multiple dwelling units. Most of the projects that have been started in 2015 will not be completed until 2016.

PNM Home Works

This program begins with a 60 minute interactive, hands-on presentation for 5th grade students and their teachers at participating schools. The program teaches students about energy efficiency, renewable and non-renewable natural resources, and how electricity is created and delivered into homes and businesses. Each student is given a sealed energy efficiency kit to take home which includes easy-to-install technologies such as a low-flow showerhead, faucet aerators, efficient light bulbs, an LED night light, and a written guide to assist families with installing the efficient technologies together while also learning about additional ways to reduce energy waste. The

program provided 5,810 kits to 69 schools during the 2015 spring and fall semesters within the PNM service territory.

Home Energy Reports

A sample group of over 54,000 PNM customers were chosen to receive several home energy reports, separate from their monthly electric bills, throughout the year. Customers were selected to participate in the program based on their energy usage. This report provides detailed information about their home's energy usage including comparisons to homes of similar characteristics. The information is intended to help customers gain a clearer understanding of their energy use and how they might be able to save energy and money. Customers can view how their energy use changes over time so they can set targets for savings. In addition, the report provides personalized energy-saving tips based on their energy use patterns and characteristics of their home. The Commission approved the discontinuation of this program for 2016; however, PNM expects some continued savings in 2016 based on past participation, which will be assessed in 2016 by the independent evaluator.

Easy Savings Kit

In 2015, a total of 7,199 kits were distributed to low-income PNM customers. Approximately 87% of these kits were distributed by mail to customers who enrolled after receiving a direct-mail postcard that was sent to PNM customers who had qualified for the Low Income Home Energy Assistance Program ("LIHEAP") in the prior year and who had not received an Easy Savings Kit in the past five years. In 2015, PNM also used several other avenues for reaching income-qualified customers. Utilizing five New Mexico assistance agencies, PNM was able to distribute 923 kits directly to low income customers seeking support. PNM also distributed kits directly to low income customers who attended the Albuquerque PNM Good Neighbor Fund event in October 2015.

Refrigerator Replacement and CFL Installation

PNM contracted with the New Mexico Mortgage Finance Authority (MFA) to install CFLs and replace inefficient refrigerators in the homes of income-qualified PNM customers. MFA and its subcontractors installed CFLs and replaced refrigerators as necessary in the homes of 320 PNM customers in 2015 as part of this program.

Market Transformation

The goal of the Market Transformation ("MT") Program is to increase awareness of energy efficiency to induce behavioral changes that result in the adoption of energy efficient measures. In 2015, MT activities continued to focus on outreach across the PNM service territory to help customers better understand how they use energy and how to make better-informed decisions on the ways they can use energy more efficiently. This outreach took a variety of forms, including community events, social media outreach and promotional campaigns stressing the benefits of energy efficiency.

Additionally, Energy Savvy, Inc. provided an on-line energy audit tool – PNM Home Energy Analyzer – for residential customers who opt to complete a short survey about their home. This tool helps customers by providing analysis and insight about how their home uses energy,

offering tips to help reduce energy use and save money, and recommending other PNM programs as applicable.

Power Saver and Peak Saver Load Management

Peak Saver and Power Saver are the PNM load management programs. PNM customers with annual peak demand of 150 kW or greater can participate in Peak Saver and customers with annual peak demand of less than 150 kW, including residential customers, can participate in Power Saver. The load management programs were successfully utilized to offset the need for peaking resources during the summer of 2015. PNM dispatched the load management resource 15 times for a total of 59 hours. The peak load curtailment amount was 59 MW as verified by ADM. The PNM system peak load for the year occurred at 4:00 PM MDT on June 22, 2015. Table 2 shows the times and durations of the load curtailment events in 2015.

Table 2

Date	Start Time	End Time	Duration (Hr)
6/17/2015	2:00 PM	6:00 PM	4.0
6/18/2015	2:00 PM	6:00 PM	4.0
6/19/2015	2:00 PM	6:00 PM	4.0
6/22/2015	2:00 PM	6:00 PM	4.0
6/23/2015	2:00 PM	6:00 PM	4.0
6/29/2015	3:30 PM	6:30 PM	3.0
6/30/2015	2:00 PM	6:00 PM	4.0
7/1/2015	2:00 PM	6:00 PM	4.0
7/28/2015	2:00 PM	6:00 PM	4.0
7/31/2015	2:00 PM	6:00 PM	4.0
8/6/2015	2:00 PM	6:00 PM	4.0
8/13/2015	2:00 PM	6:00 PM	4.0
8/14/2015	2:00 PM	6:00 PM	4.0
8/18/2015	2:00 PM	6:00 PM	4.0
8/21/2015	2:00 PM	6:00 PM	4.0
15 Events in 2015			59.0

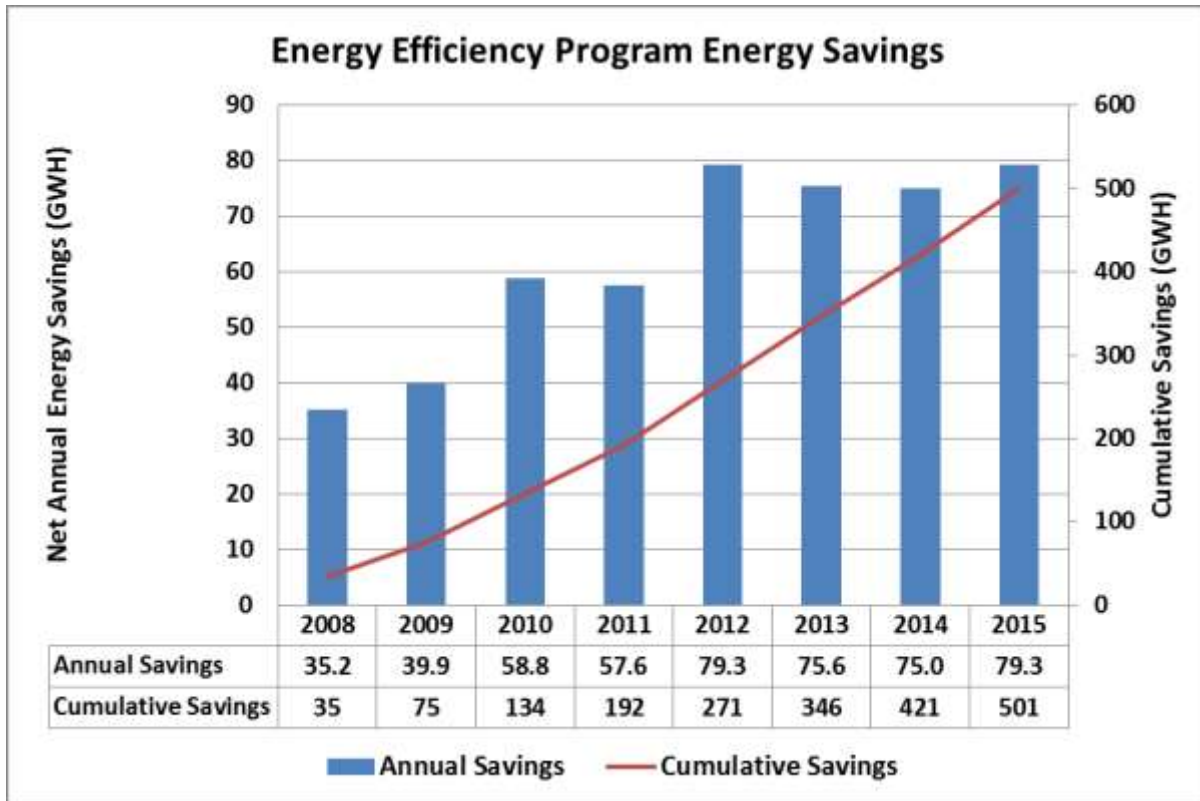
Program Benefits and Goals

The 2015 Program benefitted the PNM system, customers in all customer classes, the environment and the New Mexico economy. The Efficient Use of Energy Act (“Act”) requires that PNM achieve cumulative savings of 411 GWh by 2014, equal to five percent (5%) of PNM’s retail sales in 2005, and 658 GWh by 2020, equal to eight percent (8%) of 2005 retail sales. PNM’s cumulative savings of 421 GWh through 2014 exceeded the 2014 savings requirement specified in the Act. Figure 1 shows the annual incremental savings, on the left axis, and annual cumulative savings achieved through 2015 on the right axis.

The energy efficiency measures installed by PNM customers participating in PNM programs in any specific year will continue to save energy in years to come. However, for cost-effectiveness analysis and for purposes of determining the cumulative savings applicable to the EUEA goals in 2014 and 2020, the average effective useful life (EUL) of the portfolio is applied. The average

EUL for the portfolio is determined by dividing the total lifetime savings by the annual savings. The average portfolio EUL for the 2015 Program is nine years, which is the same as all previous years from 2008 through 2014. Therefore, cumulative savings for 2015 are the sum of all annual savings beginning in 2008. Beginning in 2017, the 2008 annual savings will no longer contribute to the cumulative savings since the nine year life for those savings will end in 2016. PNM programs will have to achieve on average 70 GWH of annual savings in years 2016 through 2020 in order to achieve the 2020 savings requirement of 658 GWH.

Figure 1



A wide range of customers participated in the 2015 Program. In the Refrigerator Recycling program, 7,668 inefficient refrigerators and freezers were removed from the market. 801,149 CFL and 323,765 LED light bulbs were discounted through the Residential Lighting program and more than 10,800 low-income customers benefited from the four programs that specifically serve low-income customers. 1,132 commercial customers, including over 322 small commercial accounts, participated in the business energy efficiency programs. In addition, 31,552 residential customers, 1,897 small business customers and approximately 553 medium commercial facilities participated in the demand response programs. Customers who participated in the programs received additional benefits through direct incentives that offset the cost of energy efficient improvements and through lower electric bills. The 2015 Program provided rebates and other incentives valued at about \$11.1 million directly to customers.

The 2015 Program also had a significant impact on the New Mexico economy. Customer incentives are designed to pay between 25 percent and 75 percent of the incremental cost of an

efficiency improvement. Using a multiplier factor of two, the economic impact of the customer incentives would be about \$22 million dollars. The 2015 Program also had a significant impact on local employment. Most of the PNM programs are implemented by third-party contractors who employ local staff. The 2015 Program directly supported approximately 34 local employees of these third-parties. In addition, much of the \$11.1 million in incentives paid to customers supported additional employment by local companies that provided the energy efficiency improvements.

In addition, the energy savings from the 2015 Program will result in a reduction in water consumption and CO₂ emissions. Estimated water savings and reductions of CO₂ are shown in Table 9 below.

The PNM Energy Efficiency Program, now in its ninth year, is a key resource in the 2014 Integrated Resource Plan (“2014 IRP”). The 2014 IRP examined many different portfolio options that could be implemented to meet expected growth in the demand for electricity from 2014 to 2033. Energy efficiency and load management programs were consistently found to be lower-cost alternatives when compared to meeting system needs with traditional supply-side resources. PNM identified its most cost-effective portfolio as “the portfolio of existing and new resources that meets electric system demand, provides acceptable system reliability and operational flexibility, and meets applicable legal and regulatory requirements, at the lowest reasonable cost to customers”.¹ PNM’s IRP includes the projected impacts of the 2015 Program and projected growth of the programs that will allow PNM to achieve the spending requirements and energy saving goals specified in the Act.

Tariff Collections

The costs of implementing the 2015 Program are recovered through the Energy Efficiency Rate Rider No. 16 (“Rider”) on customers’ bills. The current Rider includes a program cost rate element that is currently assessed monthly as a percentage (3.00%) of the monthly bill charge and a profit incentive rate element also assessed monthly as a percentage (0.195%).

Actual program expenses for calendar year 2015 were \$24,278,835 and over-collected program costs from 2014 were \$1,500,440. Therefore, PNM should have collected \$22,778,395 in 2015. During calendar year 2015, PNM had actual collections of \$23,884,179. This resulted in an over collection of \$1,105,784. PNM also owes \$81,583 in carrying charges on the monthly over-collection balances. This resulted in a total over-collection of \$1,187,366. The Final Order in Case 14-00310-UT also authorized PNM to earn a Profit Incentive. PNM submitted the documentation for a tariff rider adjustment, including surcharge factors, projected revenue, and a summary of beginning balances and amounts collected under Rider 16, to account for the program cost over-collection and profit incentive reconciliation, with supporting testimony, in a separate reconciliation filing concurrent with this annual report.

¹ “Electric Integrated Resource Plan: 2014 – 2033, July 2014, p. iii.

Regulatory Proceedings

On April 29, 2015, The Commission issued a Final Order Adopting the Certification of Stipulation and the Stipulation in Case No. 14-00310-UT. Pursuant to that order, PNM filed an Advice Notice to modify the Energy Efficiency Rider, which became effective May 27, 2015.

On November 30, 2015, PNM filed an Advice Notice to modify the Energy Efficiency and to end the 2014 reconciliation factors on the Rider. The changes went into effect December 30, 2015.

Energy Efficiency Rule Reporting Requirements

The following section of the annual report provides detailed information on the performance of the 2015 Program including information required by the NMPRC Energy Efficiency Rule, Section 17.7.2.14 – Annual Report.

Documentation of Program Expenditures

All 2015 Program expenses, including labor, materials, third-party expenses and all other costs, are tracked through a unique set of accounts. Likewise, all revenue collected through the tariff rider is booked to a special regulatory asset account which is balanced against the expenses. These costs and revenues are kept separate from PNM rate-base accounting; therefore, there is no cross-subsidization and no impact on the PNM allowed rate-of-return. Costs specific to an individual program, such as customer incentives and targeted promotion, are allocated directly to that program. Shared costs, such as internal administration, are allocated to each program in proportion to their direct costs. Total calendar year expenditures for the 2015 Program were \$24,278,835. These expenditures include all expenses incurred by PNM to develop and implement the individual programs. The same total expenditure data was provided to ADM to be included in the M&V Report. Table 3 shows the allocation of costs to the various programs for calendar year 2015.

Table 3

Programs	Administration	Promotion	M&V	Incentives (Rebates)	Third-Party Costs	Total Costs
Residential Comp.	\$ 208,906	\$ 762,765	\$ 93,357	\$ 2,189,283	\$ 2,011,711	\$ 5,266,022
Residential Lighting	\$ 123,653	\$ 40,338	\$ 28,934	\$ 1,750,119	\$ 566,974	\$ 2,510,018
Multifamily	\$ 12,111	\$ 21,224	\$ -	\$ 60,837	\$ 289,867	\$ 384,039
Commercial Comp.	\$ 354,772	\$ 30,953	\$ 160,586	\$ 4,329,059	\$ 2,173,797	\$ 7,049,168
Easy Savings	\$ 14,781	\$ 22,130	\$ -	\$ 215,970	\$ 214,881	\$ 467,762
Refrigerator & CFL Repl.	\$ 4,890	\$ 21,949	\$ -	\$ 105,283	\$ 22,003	\$ 154,124
Home Energy Reports	\$ 79,811	\$ 25,297	\$ 12,095	\$ -	\$ 446,988	\$ 564,190
PNM Home Works	\$ 35,000	\$ 22,514	\$ -	\$ 127,820	\$ 48,341	\$ 233,676
PNM Power Saver	\$ 298,274	\$ 21,989	\$ 12,056	\$ 1,706,631	\$ 3,539,325	\$ 5,578,276
PNM Peak Saver	\$ 52,199	\$ 21,949	\$ 12,056	\$ 687,920	\$ 892,217	\$ 1,666,340
Market Transformation	\$ 13,401	\$ 391,818	\$ -	\$ -	\$ -	\$ 405,220
Total	\$ 1,197,798	\$ 1,382,926	\$ 319,085	\$ 11,172,922	\$ 10,206,104	\$ 24,278,835

The Commission approved program budgets in its order issued on April 29, 2015 in Case No. 14-00310-UT. The total budget for calendar year 2015 was prorated based on the budgets

approved in 2015 and the previous case (Case No. 12-00317-UT)². The total approved budget for 2015 was \$24,360,052 and the total actual expenses for the year were \$24,278,835; therefore, total spending was less than one percent (0.3%) below the approved budget. The variations in individual program costs from the budgeted amounts were primarily due to customer participation being higher or lower than projected and additional outreach expenses. Residential Lighting and Easy Savings had higher than expected participation and additional promotion was done for the Residential Cooling, Home Energy Checkup and Refrigerator Recycling components of the Residential Comprehensive program in order to boost participation. Table 4 shows the budgeted amounts, the actual expenditures, and the variances for each program.

Table 4

Programs	Approved Budget	2015 Actual Costs	Variance (\$)	Variance (%)
Residential Comprehensive	\$ 4,677,154	\$ 5,266,022	\$ 588,869	13%
Residential Lighting	\$ 2,094,664	\$ 2,510,018	\$ 415,355	20%
Multifamily	\$ 399,657	\$ 384,039	\$ (15,618)	-4%
Commercial Comprehensive	\$ 7,402,232	\$ 7,049,168	\$ (353,063)	-5%
Easy Savings	\$ 359,722	\$ 467,762	\$ 108,040	30%
Refrigerator and CFL Replacement	\$ 145,139	\$ 154,124	\$ 8,985	6%
Home Energy Reports	\$ 438,360	\$ 564,190	\$ 125,830	29%
PNM Home Works	\$ 276,818	\$ 233,676	\$ (43,142)	-16%
PNM Power Saver	\$ 6,132,157	\$ 5,578,276	\$ (553,882)	-9%
PNM Peak Saver	\$ 2,018,092	\$ 1,666,340	\$ (351,753)	-17%
Market Transformation	\$ 416,057	\$ 405,220	\$ (10,837)	-3%
Total	\$ 24,360,052	\$ 24,278,835	\$ (81,216)	-0.3%

Estimated and Actual Participation and Savings

Table 5 presents estimated and actual customer participation (or units), annual energy savings and annual peak demand savings for each program. Estimated values represent the prorated targets for calendar year 2015. Please note that all energy savings are reported as the savings at the customer meter. Total savings to PNM include additional savings of seven percent (7%) to account for system losses.

² Beginning in 2016 all energy efficiency plans will be on a calendar year basis and will no longer require proration in compliance with the Energy Efficiency Rule.

Table 5

Program	Estimated Participants /Units	Actual Participants /Units	Estimated Savings (kWh)	Actual Savings (kWh)	Estimated Savings (kW)	Actual Savings (kW)
Residential Comp.	13,933	13,534	12,341,248	9,408,687	4,588	3,795
Residential Lighting	833,750	1,124,914	14,237,623	21,023,357	1,677	2,615
Multifamily	7	2	1,065,178	15,182	154	-
Commercial Comp.	968	1,132	37,531,653	35,751,066	7,708	4,413
Easy Savings	6,000	7,199	1,316,094	1,334,119	137	93
Refrigerator & CFL Repl.	2,398	3,648	253,661	245,377	37	38
Home Energy Reports	50,333	56,171	10,307,000	9,131,923	528	1,035
PNM Home Works	5,083	5,810	591,740	790,741	56	87
PNM Power Saver	-	45,541	537,500	580,762	44,667	42,220
PNM Peak Saver	-	103	747,917	811,680	20,000	17,198
Total			78,929,613	79,092,893	79,550	71,495

Estimated and Actual Costs and Avoided Costs (Benefits)

Table 6 presents the net present value of estimated and actual monetary costs and benefits for each program. Estimated costs and benefits are those contained in the 2014 Program Plan in Case No. 14-00310-UT. The net-present-value of monetary benefits was determined by taking the discounted value of the annual avoided costs times the annual savings over the effective useful life of each program. Please see Appendix A for PNM avoided costs.

Table 6

Program	Estimated NPV of Monetary Costs	Actual NPV of Monetary Costs	Estimated NPV of Monetary Benefits	Actual NPV of Monetary Benefits
Residential Comp.	\$ 4,324,291	\$ 4,868,734	\$ 7,496,237	\$ 6,095,308
Residential Lighting	\$ 1,936,634	\$ 2,320,653	\$ 4,705,721	\$ 7,747,070
Multifamily	\$ 369,505	\$ 355,066	\$ 466,622	\$ 4,451
Commercial Comp.	\$ 6,843,779	\$ 6,517,352	\$ 19,291,362	\$ 15,944,417
Easy Savings	\$ 332,583	\$ 432,472	\$ 407,222	\$ 898,218
Refrigerator & CFL Repl.	\$ 134,190	\$ 142,497	\$ 179,071	\$ 174,421
Home Energy Reports	\$ 405,288	\$ 521,625	\$ 506,797	\$ 400,486
PNM Home Works	\$ 255,934	\$ 216,046	\$ 283,240	\$ 342,829
PNM Power Saver	\$ 4,716,478	\$ 4,311,922	\$ 5,273,251	\$ 4,894,912
PNM Peak Saver	\$ 1,728,920	\$ 1,390,734	\$ 2,360,776	\$ 2,038,197
Market Transformation	\$ 384,668	\$ 374,649	\$ -	\$ -
Total	\$ 21,432,272	\$ 21,451,749	\$ 40,970,298	\$ 38,540,308

Cost Effectiveness Evaluation

Table 7 presents the Utility Cost Test or UCT ratio for each program and for the total portfolio of programs. The UCT ratio is the ratio of actual monetary benefits to monetary costs that are shown in Table 6 above. The UCT ratios for two programs were less than 1.0; Multifamily and Home Energy Reports. The Multifamily program experienced upfront startup and outreach costs but did not achieve program energy savings. Numerous projects are in the works but the

implementation cycle for multifamily projects can be very long. Projects started in 2015 are expected to be completed in 2016. Although the Home Energy Reports program showed significant savings, the lifetime is only one year. Therefore the costs of delivering the program exceeded the lifetime savings value. The Home Energy Reports program has been discontinued for 2016.

Table 7

Program	UCT
Residential Comprehensive	1.25
Residential Lighting	3.34
Multifamily	0.01
Commercial Comprehensive	2.45
Easy Savings	2.08
Refrigerator and CFL Replacement	1.22
Home Energy Reports	0.77
PNM Home Works	1.59
PNM Power Saver *	1.14
PNM Peak Saver *	1.47
Market Transformation	-
Total	1.80

* UCT for remaining contract term

Self-Direct Program Participation and Evaluation

PNM received and approved three applications for the Self-Direct program in 2015. PNM reviewed the applications, communicated the approvals to the customers and notified the Commission. All three projects were lighting retrofit projects at educational facilities, replacing older lighting with LED lighting. The projects met the simple payback criteria of between one and seven years. Table 8 provides the energy savings, effective useful life, simple payback and customer cost for each project.

Table 8

Project	kWh savings	kW savings	EUL (Yr)	Simple Payback (Yr)	Project Cost
Project 1	78,741	20	10	4.8	\$26,322
Project 2	80,417	9.4	10	4.8	\$26,774
Project 3	28,271	4.6	10	3.7	\$7,299

Estimated Water and CO₂ Savings

Table 9 shows the estimated CO₂ emission reductions and water savings associated with the PNM portfolio of programs. The annual avoided CO₂ emissions and water savings for the 2015 Program were determined by multiplying the PNM weighted-average emissions rate and water consumption by the annual and lifetime energy savings.

Table 9

Emission Impact	Avoided Electric Emissions Rate (Metric Tons/GWh)	Annual Avoided Emissions (Metric tons)	Lifetime Avoided Emissions (Metric tons)
CO ₂ Reduced	621.9	49,302	443,851
Water Impact	Water Consumption (gal/MWH)	Annual Water Saved (gal)	Lifetime Water Saved (gal)
Water Saved	326.5	25,882,647	233,011,416

Independent Measurement and Verification Report

PNM contracted with ADM to conduct the independent evaluation of the 2015 Program. The M&V Report is submitted as an attachment to this annual report. A summary of some of the more important findings and recommendations, along with comment from PNM, is provided below.

Background and Purpose

The Energy Efficiency Evaluation Committee, whose members are appointed by the Commission, selected ADM as the state-wide independent evaluator and this selection was approved by the Commission on November 8, 2012. The Commission approved the M&V budget and scope of work for a three year term to conduct annual measurement and verification analysis for the years 2013 – 2015. ADM conducted independent evaluation of the 2015 Program and their M&V Report is based on data from January 1, 2015 through December 31, 2015. PNM worked closely with ADM to provide the data necessary to complete the 2015 M&V Report. This included rebate processing and participant files, budget data by program and avoided-cost information.

Summary of Findings and PNM Comments

The total portfolio of programs was found to be cost effective and all but two of the individual programs were cost-effective. The results of the M&V analysis will be used to adjust technical assumptions made by PNM regarding program performance, unit savings and net-to-gross values. The M&V Report contains many specific findings and recommendations which are summarized in the following section.

Refrigerator Recycling

ADM Program Recommendations

- 1. Continue the program, if a qualified implementation contractor can be found.**
- 2. Update technical assumptions to reflect increasingly efficient units.**
- 3. Advertise the annual cost savings from from replacing a second refrigerator.** The PNM marketing materials only indicate that an old refrigerator uses “3 times more electricity than new models, costing hundreds of dollars a year in utility bills”. PNM should provide a dollar estimate, based on residential rates and the ENERGYSTAR® refrigerator retirement calculator.

PNM Response

- PNM has contracted with ARCA to resume operation of this program. The program was available to customers effective April 1, 2016.
- PNM makes every attempt to either use the TRM or most recently evaluated program value for the current Ex Ante savings assumptions.
- PNM agrees that a quantified savings value could be more compelling, and will incorporate ADM's suggestion into its marketing materials.

Residential Lighting

ADM Program Recommendations

- 1. The Evaluators concluded that program staff have provided adequate retailer support to all areas within PNM's service territory, though the lack of big-box retailer options in some areas poses a barrier to increasing per-capita lighting sales. Program staff should consider expanding service in such areas to include more grocery stores or pharmacies.**

PNM Response

- Smith's Food & Drug participated in the 2015 PNM Residential Lighting Program. In 2014, Albertsons & Walgreens participated; however, neither retailer agreed to participate in 2015 due to other sales priorities. To extend program reach, dollar stores (Family Dollar & Dollar Tree) and regional hardware chains (Samon's) were brought into the marketplace. Lamps are also available through the internet.

Whole House & Low Income Whole House

ADM Program Conclusions & Recommendations

- 1. The program has high participant satisfaction.** Program participants responded very positively when asked to rate their satisfaction with the application process, rebate amounts, and overall satisfaction.
- 2. Advanced power strips were often not installed.** The Evaluators found that advanced power strips had an in-service-rate of 29% due to some customers not installing the power strip at all and others using it to plug in items that do not have an idle mode. In particular, elderly customers demonstrated marked difficulty in using the power strip.
- 3. The program model is not designed to pass the UCT.** This program was designed and launched prior to New Mexico shifting cost-benefit screening from TRC to UCT. This program relied upon gas savings to boost benefit calculations, and as such it was ill-suited for the UCT framework.
- 4. Tracking data was significantly improved compared to 2014.** The Evaluators noted in 2014 that tracking data was often provided several months late and was spread to

multiple databases. The tracking data was consolidated and further detail on room of installation for CFLs and LEDs was provided.

5. **Exterior Lighting was not properly applied in tracking data.** 32.6% of line items that were marked as “Exterior Lighting” (13W Exterior CFL, 23W Exterior CFL) were installed in interior spaces.
6. **Installation of LED night lights did not comply with program rules.** Fifty-three percent of respondents that received LEDs reported that they were installed in empty sockets that had no prior night light.
7. **Consider tiered direct install packages based upon heating and water heating fuel type.** The Evaluators found that only 12.5% of participants that received low flow devices had electric water heating. If an arrangement cannot be reached with New Mexico Gas to cost-share, PNM should consider developing a package for customers with gas water heating that does not include the low flow devices. This could be provided for a lower co-pay.
8. **Limit power strips to one per customer, and develop an educational brochure to be packaged with it.** The Evaluators noted that there were significantly lower installation rates when participants received multiple power strips. It is recommended that these be limited to one per customer, and that an educational brochure showing (1) how to use the power strip and (2) what types of equipment will provide savings when installed with the power strip be included with the equipment.
9. **Enforce installation rules for LED night lights.** The high percent of night lights installed in empty sockets is problematic in that it increases energy use for program participants.
10. **Continue with this program channel as planned in 2016 as part of Residential Comprehensive, provided the needed changes can be made to ensure cost-effectiveness.** In its two years as a stand-alone program, the HEC has had low cost-effectiveness due to poor installation rates for some products and a lack of uptake of higher-value rebate measures. The program was designed to pass the TRC by including natural gas savings, but soon after this program was approved, New Mexico adopted the UTC as the cost-effectiveness test. Examples of the changes needed under the UTC would include only installing low flow devices in homes with electric water heating.
11. **Consider offering a larger unit for high-occupancy households.** Five percent of survey respondents that received a refrigerator stated that it was too small for their needs. This may warrant further research but program staff should consider offering a larger model for low income households with above-average occupancy.

12. Savings for globe lighting are significantly lower than for other CFLs and LEDs.

This type of lighting is most-commonly installed in bathroom fixtures, and as such the TRM value of 2.24 hours per day overstates the savings from this lamp type.

PNM Response

- PNM has a new implementer for this program. PNM agrees with recommendations 2, 6, 8 and 9 and has already made the recommended changes. For example LED night lights only replace exiting lights. The new program implementer has a documented quality assurance – quality control (QA-QC) process. The purpose of QA-QC is to verify installation information and documentation of tracking data.
- Item 11: PNM will research this opportunity. Refrigerator savings currently account for approximately 70 percent of the Low Income program savings.
- Item 12: PNM will review the tracking data assumptions and review this issue with the implementer.
- Item 3 & 10: To help improve cost effectiveness, PNM and New Mexico Gas Company have entered into a memorandum of understanding. A portion of costs will be borne by NMGC, and NMGC will claim the therm savings from low flow showerheads for homes with gas heat. PNM has also added insulation to the list of measures qualifying for rebates. PNM’s insulation rebate will be in addition to the NMGC incentive.

Residential Cooling

ADM Program Recommendations

- 1. The program has very high participant satisfaction.** Program participants responded very positively when asked to rate their satisfaction with the overall process, time to receive rebate check and ease of the application process. Further, most respondents were very satisfied with the performance of the new equipment
- 2. There are inconsistencies between summary and detail data.** The Evaluators found that the summary data over-stated savings by .8%.
- 3. Evaporative cooling participants were more likely to have been helped by retailer staff.** The most significant difference in the customer experience can be seen in “in-store display” and “retailer staff” responses. Evaporative cooling participants were significantly more likely to indicate having been helped by retailer staff than refrigerated air participants (22.5% compared to 8.8%), while refrigerated air participants were more likely to have learned about the program from an in-store display (35.0% to 23.8%).
- 4. Develop more accurate reconciliation of detailed tracking to summary tracking.**
- 5. Identify marketing approaches that reach refrigerated air customers prior to their decision-making.** Refrigerated air survey respondents were significantly more likely to indicate having learned of the program after having selected their equipment or after already having completed installation.

- 6. Consider limiting the use of on-package stickers to units known to be on visible display.** The program uses stickers indicating rebate eligibility on the boxes of qualifying equipment. However, this is potentially problematic if the package is not observed until after the purchase has been made. Program staff should consider being more selective in the application of these stickers. If customers do not know about the program and do not learn about the program until seeing the program sticker on their equipment subsequent to purchase, then this marketing approach will guide free-riders into the program.

PNM Response

- Items 2 & 4: PNM is improving processes to ensure consistent savings assumptions, and reconciling information between invoice and tracking data.
- Item 3: Evaporative coolers are readily available at DIY and hardware stores to customers who wish to install the units themselves. Though some DIY locations offer information about refrigerated air, the complexity of these systems requires the homeowner to consult with a contractor for installation. The program implementer's outreach efforts were expanded to include many contractors during Q4.
- Item 5: Contractor and trade ally outreach efforts are being expanded.
- Item 6: The program does not sticker product packages for any cooling items. However, tags are added to unboxed, display models and next to on-shelf pricing displays for room air conditioners.

Home Energy Reports

ADM Program Observation

Program dropouts occurred at a regular pace until November. From February through October, 117 customers dropped out of the program per month. In November and December, this increased to 741 per month.

PNM Response

Generally, customers dropping out of the program were dissatisfied with the message content of the report. While most of these customers have electric heat, some had uses of electricity that could not be varied such as medical devices.

Commercial Comprehensive ("CCP")

ADM Program Conclusions and Recommendations

- 1. The CCP has very high participant satisfaction.** Program participants responded very positively when asked to rate their satisfaction with various components of the program. Satisfaction was high for all metrics, including incentive amounts, ease of application processes, performance of equipment installed, and the service provided by PNM staff, DNV-GL staff, and Trade Allies,

2. **The Building Tune-Up channel was not ready for evaluation.**
3. **Industrial retrofit projects displayed poor realization.** The Evaluators conducted M&V of industrial process retrofits at three separate plants. One plant is an ongoing program participant who has proven to provide accurate engineering estimates on their process improvements. The other two relied more heavily on DNV-GL calculations. The Evaluators found that in both of these projects, savings were severely overestimated as a result of a short metering period.
4. **Documentation for QuickSaver does not support Effective Useful Life calculations.** There are discrepancies in the data collected for Retrofit Rebates and New Construction compared with QuickSaver. QuickSaver provides much greater detail on the line items installed but does not present the measure EUL.
5. **Use a minimum of two weeks of metered data for industrial projects.** Some industrial projects were metered for one week, and realization for these projects varied widely.
6. **Add measure lives to QuickSaver tracking.** The lifetime kWh field in the Retrofit Rebates and New Construction data is very useful in supporting M&V. If possible, program staff should add a similar field to QuickSaver tracking.
7. **Verify that all savings are reported.** The Evaluators found numerous instances where tracking data for custom projects failed to show a claimed kW or lifetime kWh value. These values were filled in based on EULs from similar projects.
8. **Conduct periodic review of Building Operator Certification (BOC) materials.** Solicit instructor feedback and suggestions on the course materials, which include up-to-date information, case studies and local examples, visual formatting of slides, and other information. Periodically review the current curriculum, using a panel of building operators or experienced professionals, to ensure that all necessary topics are included, that any unnecessary topics are removed, and that the curriculum remains fresh, relevant, and up-to-date.

PNM Response

- Item 3: ADM only looked at one calculation to determine water temperature set points. A more comprehensive baseline was used in determining savings. ADM modified their realization rate upon further review.
- Item 4: We will review our values and make necessary changes to assumptions and tracking data.
- Item 5: As in Item 3, more extensive baseline determinations were made and the one week period was used in verifying final set points.
- Item 6 & 7: PNM will ensure all necessary data is captured prior to evaluation.

- Item 8: PNM will request that DNV-GL solicit feedback from the BOC program instructors, as well as building operators and professional experts, and incorporate changes to ensure that the curriculum is relevant and up-to-date.

Appendix A – PNM Avoided Costs

The following table provides the avoided energy and demand costs for calendar year 2015. These costs were used in the PNM cost-effectiveness model and by ADM in its program evaluation. The costs are the same as those submitted in Case No. 14-00310-UT, which was the most recently approved energy efficiency case at the time the annual report was submitted.

	Energy (\$/kWh)	Capacity (\$/kW-yr)	CO₂ (\$/kWh)
2015	\$ 0.0352	\$79.77	\$ -
2016	\$ 0.0350	\$79.77	\$ -
2017	\$ 0.0358	\$79.77	\$ -
2018	\$ 0.0369	\$79.77	\$ -
2019	\$ 0.0381	\$79.77	\$ -
2020	\$ 0.0394	\$79.77	\$ 0.0091
2021	\$ 0.0408	\$79.77	\$ 0.0110
2022	\$ 0.0423	\$79.77	\$ 0.0122
2023	\$ 0.0437	\$79.77	\$ 0.0134
2024	\$ 0.0453	\$79.77	\$ 0.0146
2025	\$ 0.0470	\$79.77	\$ 0.0159
2026	\$ 0.0489	\$79.77	\$ 0.0182
2027	\$ 0.0508	\$79.77	\$ 0.0206
2028	\$ 0.0528	\$79.77	\$ 0.0232
2029	\$ 0.0548	\$79.77	\$ 0.0258
2030	\$ 0.0571	\$79.77	\$ 0.0286
2031	\$ 0.0594	\$79.77	\$ 0.0315
2032	\$ 0.0618	\$79.77	\$ 0.0345
2033	\$ 0.0644	\$79.77	\$ 0.0376