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February 28, 2014

ORIGINAL

Docket Control
Arizona Corporation Commission
1200 W. Washington
Phoenix, AZ 85007

RE: Arizona Public Service Company's 2013 Demand Side Management Progress Report, Docket No. E-00000U-14-0049

Pursuant to the Electric Energy Efficiency Standard Rules, A.A.C. R14-2-2409(A), APS is required to.

"By March 1 of each year, an affected utility shall submit to the Commission, in a Commission established docket for that year, a DSM progress report providing information for each of the affected utilities Commission-approved DSM programs..."

Pursuant to Commission Decision No. 73089, the reporting requirements ordered in Decision Nos. 59601, 67744, 68648, 70637, 71444, 71866, 72032, 72060, and 72088 were superseded by the Energy Efficiency Rules and also required additional reporting requirements.

Therefore, pursuant to R-14-2-2409(A) and Commission Decision No. 73089, Arizona Public Service Company is submitting its DSM Annual Progress Report for 2013.

If you have any questions regarding this information, please contact Greg Bernosky at (602)250-4849.

Sincerely,

Lisa Malagon

LM/cd

cc: Brian Bozzo

Arizona Corporation Commission

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ARIZONA PUBLIC SERVICE COMPANY

2013 DEMAND SIDE MANAGEMENT ANNUAL PROGRESS REPORT

February 28, 2014

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I. Table of Contents

| | | |
|------|--|----|
| I. | INTRODUCTION..... | 4 |
| II. | 2013 DSM Program Results..... | 4 |
| A. | Compliance with Energy Efficiency ("EE") Requirements..... | 4 |
| III. | Program Performance and Program Incentive Calculations..... | 5 |
| B. | Year-To-Date DSM Program Expenses..... | 6 |
| C. | Program-To-Date DSM Program Expenses..... | 7 |
| D. | Year-To Date DSM Electric Savings..... | 8 |
| E. | Program-To-Date DSM Electric Savings..... | 9 |
| F. | Year-To-Date Energy Efficiency Societal Benefits..... | 10 |
| G. | Program-To-Date EE Societal Benefits..... | 11 |
| H. | 2013 Performance Incentive Calculation..... | 12 |
| I. | Net Environmental Benefits..... | 12 |
| J. | Demand Response Load Reduction and Energy Savings..... | 13 |
| IV. | Residential Energy Efficiency Programs..... | 15 |
| 1. | Consumer Products Program..... | 15 |
| 2. | Appliance Recycling Program..... | 19 |
| 3. | Residential New Home Construction..... | 22 |
| 4. | Residential Existing Homes Heating, Ventilation, and Air Conditioning Program..... | 26 |
| 5. | Home Performance with ENERGY STAR®..... | 30 |
| 6. | Residential Conservation Behavior Program..... | 36 |
| 7. | Multifamily Energy-Efficiency Program..... | 38 |
| 8. | Shade Tree Program..... | 42 |
| 9. | Energy Wise Low Income Weatherization..... | 45 |
| V. | Non-Residential Programs..... | 49 |
| 10. | Large Existing Facilities..... | 49 |
| 11. | New Construction and Major Renovations..... | 55 |
| 12. | Small Business Program..... | 58 |
| 13. | Schools Program..... | 64 |
| 14. | Energy Information Services ("EIS") Program..... | 70 |
| VI. | Demand Response Programs..... | 72 |

| | |
|--|----|
| 15. Home Energy Information Pilot | 72 |
| 16. Peak Time Rebate – Residential | 75 |
| 17. Time of Use (“TOU”) Rates Including Super Peak Pricing (“SPP”) | 76 |
| 18. APS Peak Solutions® Program | 77 |
| 19. Critical Peak Pricing – General Service and Residential | 78 |
| VII. Financing Programs..... | 79 |
| VIII. Codes and Standards Support | 80 |
| IX. Measurement Evaluation and Research | 92 |
| X. American Recovery and Reinvestment Act..... | 93 |

I. INTRODUCTION

Arizona Public Service Company ("APS" or "Company") is filing this Demand Side Management Annual Progress Report ("Progress Report") for 2013 ("Reporting Period") in compliance with R14-2-2409(A) and the reporting requirements contained in Arizona Corporation Commission ("ACC" or "Commission") Decision No. 73089. This report includes the following information for all APS Demand Side Management ("DSM") programs that were in place during the Reporting Period:

- APS's progress toward meeting the cumulative energy efficiency standard;
- An identification of Commission approved DSM Programs and measures by customer segment;
- A description of the findings from any research projects completed;
- A brief description of the program;
- Program goals, objectives, and savings targets;
- Level of customer participation;
- Costs incurred disaggregated by type of cost, such as administrative costs, rebates, and monitoring costs;
- A description of the results of evaluation and monitoring activities;
- kW and kWh savings;
- Environmental benefits including reduced emissions and water savings;
- Incremental benefits and net benefits in dollars;
- Performance Incentive calculations;
- Problems encountered and proposed solutions;
- A description of modifications proposed for the following year;
- If applicable, program or program measure termination and proposed date of termination;
- Where applicable, reporting requirements included in Commission Decision No. 73089 and other Commission Decisions; and
- Other significant information.

II. 2013 DSM Program Results

A. Compliance with Energy Efficiency ("EE") Requirements

For calendar year 2013, the Commission established a cumulative annual EE requirement of 5 percent of the utility's 2012 retail kilowatt-hour ("kWh") sales. A summary of APS's 2013 compliance with the Energy Efficiency Standard is shown in Table 1. In 2013, the Company achieved 101.6% of the Commission's EE goal. APS has achieved the cumulative megawatt hour ("MWh") savings goal for 2013 and spent \$18.5 million less than the overall budget approved for 2012 of \$77 million.

Table 1
2013 DSM Savings Goal & Achievement

| Goal Calculation | |
|---|----------------|
| 2012 Retail Sales ¹ | 30,469,459 |
| 2013 Cumulative EE Standard | <u>5.0%</u> |
| 2013 Goal (MWh) | 1,523,473 |
| Less Cumulative Savings from 2012 Applied to 2013 | <u>992,973</u> |
| 2013 DSM Savings Goal | 530,500 |
| Performance | |
| Contribution From Demand Response (10% of Goal) | 53,050 |
| Contribution From Energy Efficiency Programs | <u>485,791</u> |
| Total 2013 MWh Achieved | 538,841 |
| Over or (Under) 2013 Goal | 8,341 |
| Performance to Goal Ratio | 101.6% |

Note:

¹Includes line losses.

III. Program Performance and Program Incentive Calculations

Program expenses are provided in Tables 2a through 3b and DSM program megawatt ("MW") and megawatt-hour ("MWh") savings are provided in Tables 4 and 5. Tables 6 and 7 show net benefits and Table 8 shows the performance incentive calculation for 2013. Table 9 shows the environmental benefits associated with the lifetime energy savings resulting from DSM programs. Table 10 shows 2013 demand response ("DR") load reduction and savings values.

B. Year-To-Date DSM Program Expenses

Table 2a
Year-To-Date Demand Response Program Expenses: January - December 2013

| Program | Rebates & Incentives | Measurement Evaluation and Research ("MER") | Metering | Program Implementation ¹ | Program Marketing | Planning & Administration | Total Program Costs |
|---------------------------------|----------------------|---|----------------|-------------------------------------|-------------------|---------------------------|---------------------|
| HEI Pilot | \$521,452 | \$169,647 | \$0 | \$246,931 | \$7,214 | \$193,340 | \$1,138,584 |
| Marketing & MER of Rate Options | \$0 | \$0 | \$2,832 | \$94,650 | \$228 | \$0 | \$97,710 |
| Peak Solutions | \$0 | \$0 | \$0 | \$1,563,392 | \$0 | \$77,450 | \$1,640,842 |
| Total | \$521,452 | \$169,647 | \$2,832 | \$1,904,973 | \$7,442 | \$270,790 | \$2,877,136 |

Table 2b
Year-To-Date Energy Efficiency Program Expenses: January - December 2013

| Program | Rebates & Incentives | Training & Technical Assistance | Consumer Education | Program Implementation ¹ | Program Marketing | Planning & Administration | Total Program Costs |
|--------------------------------|----------------------|---------------------------------|--------------------|-------------------------------------|--------------------|---|---------------------|
| Residential Program | | | | | | | |
| Consumer Products | \$4,791,967 | \$0 | \$1,158 | \$3,060,235 | \$376,449 | \$328,354 | \$8,558,163 |
| Existing Homes | \$5,186,494 | \$123,869 | \$189,684 | \$2,327,543 | \$208,658 | \$355,091 | \$8,391,339 |
| New Construction | \$4,276,250 | \$65,258 | \$790 | \$348,979 | \$322,131 | \$193,383 | \$5,206,791 |
| Appliance Recycling | \$213,330 | \$0 | \$0 | \$540,609 | \$181,485 | \$70,735 | \$1,006,159 |
| Conservation Behavior | \$0 | \$0 | \$0 | \$818,001 | \$0 | \$53,871 | \$871,872 |
| Multi-Family | \$708,137 | \$2,800 | \$0 | \$496,908 | \$1,576 | \$85,902 | \$1,295,323 |
| Shade Tree | \$21,320 | \$0 | \$1,587 | \$131,009 | \$1,519 | \$13,169 | \$168,604 |
| Low Income | \$2,167,550 | \$10,000 | \$0 | \$50,000 | \$28,480 | \$126,027 | \$2,382,057 |
| Total | \$17,365,048 | \$201,927 | \$193,219 | \$7,773,284 | \$1,120,298 | \$1,226,532 | \$27,880,308 |
| Non-Residential Program | | | | | | | |
| Large Existing Facilities | \$11,005,083 | \$93,214 | \$4,332 | \$2,653,064 | \$283,845 | \$253,701 | \$14,293,239 |
| New Construction | \$1,347,549 | \$15,187 | \$722 | \$389,776 | \$23,451 | \$54,046 | \$1,830,731 |
| Small Business | \$1,575,376 | \$28,409 | \$1,444 | \$606,682 | \$165,896 | \$90,685 | \$2,468,492 |
| Energy Information Services | \$45,654 | \$500 | \$0 | \$11,164 | \$0 | \$340 | \$57,658 |
| Schools ² | \$1,530,093 | \$24,775 | \$722 | \$798,536 | \$39,584 | \$59,276 | \$2,452,986 |
| Total | \$15,503,755 | \$162,085 | \$7,220 | \$4,459,222 | \$512,776 | \$458,048 | \$21,103,106 |
| Codes & Standards | \$0 | \$0 | \$0 | \$90,830 | \$0 | \$13,441 | \$104,271 |
| Total EE Program Costs | \$32,868,803 | \$364,012 | \$200,439 | \$12,323,336 | \$1,633,074 | \$1,698,021 | \$49,087,685 |
| | | | | | | Measurement, Evaluation & Research | \$1,979,340 |
| | | | | | | Performance Incentive³ | \$4,529,373 |
| | | | | | | Total EE Program Expense | \$55,596,398 |
| | | | | | | Total DSM Expense | \$58,473,534 |

Notes:

¹ Includes the cost for the Implementation Contractor.

² Schools are permitted to receive funding from other Non-Residential programs. Refer to the Schools Program section for additional information regarding total funds allocated to school districts.

³ Details of the Performance Incentive calculation are provided in Table 8.

C. Program-To-Date DSM Program Expenses

Table 3a

Program-To-Date Demand Response Program Expenses: January 2011 - December 2013

| Program | Rebates & Incentives | Measurement Evaluation and Research | Metering | Program Implementation ¹ | Program Marketing | Planning & Administration | Total Program Costs |
|---------------------------------|----------------------|-------------------------------------|-----------------|-------------------------------------|-------------------|---------------------------|---------------------|
| HEI Pilot | \$521,452 | \$186,949 | \$0 | \$735,103 | \$127,179 | \$373,432 | \$1,944,115 |
| Marketing & MER of Rate Options | \$0 | \$0 | \$37,334 | \$129,882 | \$137,246 | \$0 | \$304,462 |
| Peak Solutions | \$0 | \$0 | \$51,017 | \$9,539,558 | \$0 | \$205,740 | \$9,796,315 |
| Total | \$521,452 | \$186,949 | \$88,351 | \$10,404,543 | \$264,425 | \$579,172 | \$12,044,892 |

Table 3b

Program-To-Date: Energy Efficiency Program Expenses: January 2005 - December 2013

| Program | Rebates & Incentives | Training & Technical Assistance | Consumer Education | Program Implementation ¹ | Program Marketing | Planning & Administration | Total Program Costs |
|--------------------------------|----------------------|---------------------------------|--------------------|-------------------------------------|---------------------|---|----------------------|
| Residential Program | | | | | | | |
| Consumer Products | \$28,055,104 | \$4,633 | \$53,335 | \$12,597,573 | \$3,737,710 | \$1,619,849 | \$46,068,204 |
| Existing Homes | \$34,933,623 | \$1,048,749 | \$1,542,342 | \$11,514,465 | \$2,664,317 | \$1,253,756 | \$52,957,252 |
| New Construction | \$11,288,506 | \$742,349 | \$130,126 | \$2,199,453 | \$2,707,750 | \$934,056 | \$18,002,240 |
| Appliance Recycling | \$1,012,521 | \$0 | \$0 | \$2,719,684 | \$775,825 | \$166,753 | \$4,674,783 |
| Conservation Behavior | \$0 | \$0 | \$0 | \$2,441,108 | \$0 | \$208,074 | \$2,649,182 |
| Multi-Family | \$1,236,761 | \$3,995 | \$101 | \$1,934,853 | \$19,886 | \$239,717 | \$3,435,313 |
| Shade Tree | \$106,814 | \$0 | \$3,522 | \$566,779 | \$15,418 | \$47,089 | \$739,622 |
| Low Income | \$13,251,379 | \$106,294 | \$22,972 | \$719,860 | \$95,354 | \$958,701 | \$15,154,560 |
| Total | \$89,884,708 | \$1,906,020 | \$1,752,398 | \$34,693,775 | \$10,016,260 | \$5,427,995 | \$143,681,156 |
| Non-Residential Program | | | | | | | |
| Large Existing Facilities | \$59,096,585 | \$1,113,405 | \$292,928 | \$15,179,467 | \$3,200,152 | \$2,231,450 | \$81,113,987 |
| New Construction | \$12,093,280 | \$229,725 | \$57,582 | \$5,470,308 | \$1,242,650 | \$786,005 | \$19,879,550 |
| Small Business | \$8,722,198 | \$131,879 | \$27,316 | \$3,794,015 | \$755,685 | \$489,421 | \$13,920,514 |
| Building Operator Training | \$0 | \$56,897 | \$0 | \$22,043 | \$15,783 | \$7,480 | \$102,203 |
| Energy Information Services | \$148,313 | \$18,317 | \$1,753 | \$193,104 | \$12,686 | \$28,426 | \$402,599 |
| Schools ² | \$8,996,013 | \$182,526 | \$27,071 | \$3,181,435 | \$762,838 | \$435,246 | \$13,585,129 |
| Total | \$89,056,389 | \$1,732,749 | \$406,650 | \$27,840,372 | \$5,989,794 | \$3,978,028 | \$129,003,982 |
| Codes & Standards | \$0 | \$0 | \$0 | \$160,989 | \$0 | \$34,982 | \$195,971 |
| Total EE Program Costs | \$178,941,097 | \$3,638,769 | \$2,159,048 | \$62,695,136 | \$16,006,054 | \$9,441,005 | \$272,881,109 |
| | | | | | | Measurement, Evaluation & Research | \$13,013,352 |
| | | | | | | Performance Incentive³ | \$ 27,723,126 |
| | | | | | | Total EE Program Expense | \$313,617,587 |

Notes:

¹Includes the cost for the Implementation Contractor.

²Schools are permitted to receive funding from other Non-Residential programs. Refer to the Schools Program section for additional information regarding total funds allocated to school districts.

³Details of the Performance Incentive calculation are provided in Table 8. The program-to-date performance incentive amount is a summation of the performance incentive amount as calculated during each previous reporting period beginning with the January through June 2005 Progress Report.

D. Year-To Date DSM Electric Savings

Table 4
Year-To-Date DSM Electric Savings: January - December 2013^{1, 3, 5}

| Program | Gross Peak MW Capacity Savings | Gross Annual MWH Savings | Gross Lifetime MWH Savings ² | Net Peak MW Capacity Savings ⁴ | Net Annual MWH Savings ⁴ | Net Lifetime MWH Savings ^{2, 4} |
|--------------------------------|---|-----------------------------------|--|--|--|---|
| Residential Program | | | | | | |
| Consumer Products | 16.2 | 154,233 | 986,215 | 16.2 | 154,233 | 986,215 |
| Existing Homes | 10.9 | 17,466 | 227,106 | 10.9 | 17,466 | 227,106 |
| New Construction | 9.7 | 19,427 | 388,546 | 9.7 | 19,427 | 388,546 |
| Appliance Recycling | 1.3 | 8,787 | 52,720 | 1.3 | 8,787 | 52,720 |
| Conservation Behavior | 4.3 | 24,944 | 24,944 | 4.3 | 24,944 | 24,944 |
| Multi-Family | 0.9 | 9,487 | 102,519 | 0.9 | 9,487 | 102,519 |
| Shade Tree | 0.1 | 351 | 10,516 | 0.1 | 351 | 10,516 |
| Low Income ³ | <u>0.2</u> | <u>1,491</u> | <u>26,084</u> | <u>0.2</u> | <u>1,491</u> | <u>26,084</u> |
| Total | 43.6 | 236,186 | 1,818,650 | 43.6 | 236,186 | 1,818,650 |
| Non-Residential Program | | | | | | |
| Large Existing Facilities | 26.2 | 184,207 | 2,514,141 | 26.2 | 184,207 | 2,514,141 |
| New Construction | 5.8 | 15,513 | 217,903 | 5.8 | 15,513 | 217,903 |
| Small Business | 3.9 | 14,155 | 186,029 | 3.9 | 14,155 | 186,029 |
| Energy Information Services | 1.7 | 25 | 124 | 1.7 | 25 | 124 |
| Schools | <u>4.7</u> | <u>13,481</u> | <u>176,467</u> | <u>4.7</u> | <u>13,481</u> | <u>176,467</u> |
| Total | 42.3 | 227,381 | 3,094,664 | 42.3 | 227,381 | 3,094,664 |
| Codes & Standards | 4.8 | 22,224 | 0 | 4.8 | 22,224 | 0 |
| DR Contribution | <u>0</u> | <u>53,050</u> | <u>0</u> | <u>0</u> | <u>53,050</u> | <u>0</u> |
| Total DSM Savings | 90.7 | 538,841 | 4,913,314 | 90.7 | 538,841 | 4,913,314 |

Notes:

¹Savings for 2008 and after are MER adjusted, per Decision No. 69663, and savings prior to 2008 are not MER adjusted.

²Refers to savings over the expected lifetime of all program measures.

³Savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%.

⁴Based on 2010 MER net to gross ratio ("NTGR") analysis, APS is utilizing a NTGR of 1.0 for all DSM programs and measures.

⁵Measure level savings are too voluminous to include in this report and are provided to Commission Staff as part of Annual Progress Report workpapers.

E. Program-To-Date DSM Electric Savings

Table 5

Program-To-Date DSM Electric Savings: January 2005 - December 2013^{1, 3}

| Program | Gross Peak MW Capacity Savings | Gross Annual MWH Savings | Gross Lifetime MWH Savings ² | Net Peak MW Capacity Savings ⁴ | Net Annual MWH Savings ⁴ | Net Lifetime MWH Savings ^{2, 4} |
|--------------------------------|--------------------------------|--------------------------|---|---|-------------------------------------|--|
| Residential Program | | | | | | |
| Consumer Products | 131.6 | 1,127,249 | 6,714,141 | 113.2 | 981,156 | 5,880,732 |
| Existing Homes | 74.3 | 115,477 | 1,547,846 | 63.8 | 104,343 | 1,383,463 |
| New Construction | 36.2 | 68,256 | 1,365,121 | 35.3 | 66,252 | 1,325,035 |
| Appliance Recycling | 7.5 | 48,775 | 292,647 | 6.7 | 43,336 | 260,013 |
| Conservation Behavior | 9.7 | 61,067 | 61,067 | 9.7 | 61,067 | 61,067 |
| Multi-Family | 1.8 | 18,667 | 176,952 | 1.8 | 18,667 | 176,952 |
| Shade Tree | 0.9 | 1,600 | 47,971 | 0.9 | 1,600 | 47,971 |
| Low Income | <u>2</u> | <u>11,340</u> | <u>207,511</u> | <u>2</u> | <u>11,340</u> | <u>207,511</u> |
| Total | 263.7 | 1,452,431 | 10,413,256 | 233.1 | 1,287,760 | 9,342,745 |
| Non-Residential Program | | | | | | |
| Large Existing Facilities | 109.0 | 833,581 | 11,228,175 | 103.7 | 787,366 | 10,594,219 |
| New Construction | 24.8 | 224,578 | 3,229,654 | 22.2 | 189,217 | 2,725,874 |
| Small Business | 19.7 | 101,695 | 1,411,679 | 19 | 97,549 | 1,354,368 |
| Building Operator Training | 0.2 | 1,001 | 12,447 | 0.1 | 701 | 8,713 |
| Energy Information Services | 4.5 | 2,832 | 41,904 | 4.5 | 2,832 | 41,904 |
| Schools | <u>16.2</u> | <u>91,430</u> | <u>1,291,499</u> | <u>15.3</u> | <u>86,142</u> | <u>1,211,370</u> |
| Total | 174.4 | 1,255,117 | 17,215,358 | 164.8 | 1,163,806 | 15,936,449 |
| Codes & Standards | 5.4 | 24,556 | 0 | 5.4 | 24,556 | 0 |
| DR Contribution | <u>0</u> | <u>149,583</u> | <u>0</u> | <u>0</u> | <u>149,583</u> | <u>0</u> |
| Total DSM Savings | 443.5 | 2,881,687 | 27,628,614 | 403.3 | 2,625,705 | 25,279,193 |

Notes:

¹Savings for 2008 and after are MER adjusted, per Decision No. 69663, and savings prior to 2008 are not MER adjusted.

²Refers to savings over the expected lifetime of all program measures.

³Savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%.

⁴Based on 2010 MER NTGR analysis, APS is utilizing a NTGR of 1.0 for all DSM programs and measures.

F. Year-To-Date Energy Efficiency Societal Benefits

Table 6

Year-To-Date Energy Efficiency Societal Benefits: January - December 2013

| Program | Program Cost | Societal Benefits | Societal Cost | Net Benefits |
|--|---------------------|----------------------|----------------------|---------------------|
| Residential Program | | | | |
| Consumer Products | \$8,558,163 | \$34,628,830 | \$11,629,355 | \$22,999,475 |
| Existing Homes | \$8,391,339 | \$13,118,851 | \$13,650,731 | -\$531,880 |
| New Construction | \$5,206,791 | \$17,125,038 | \$14,941,746 | \$2,183,292 |
| Appliance Recycling | \$1,006,159 | \$1,906,973 | \$792,829 | \$1,114,144 |
| Conservation Behavior | \$871,872 | \$868,149 | \$813,617 | \$54,532 |
| Multi-Family | \$1,295,323 | \$3,123,876 | \$1,986,269 | \$1,137,607 |
| Shade Tree | \$168,604 | \$333,194 | \$379,736 | -\$46,542 |
| Low Income ^{1,2} | <u>\$2,382,057</u> | <u>\$2,241,763</u> | <u>\$2,241,763</u> | <u>\$0</u> |
| Total | \$27,880,308 | \$73,346,674 | \$46,436,046 | \$26,910,628 |
| Non-Residential Program | | | | |
| Large Existing Facilities | \$14,293,239 | \$75,554,152 | \$43,405,314 | \$32,148,838 |
| New Construction | \$1,830,731 | \$8,376,817 | \$3,850,045 | \$4,526,772 |
| Small Business | \$2,468,492 | \$6,342,415 | \$4,036,740 | \$2,305,675 |
| Energy Information Services | \$57,658 | \$298,672 | \$65,904 | \$232,768 |
| Schools | \$2,452,986 | \$6,438,896 | \$5,878,906 | \$559,990 |
| Total | \$21,103,106 | \$97,010,952 | \$57,236,909 | \$39,774,043 |
| Codes & Standards | \$104,271 | \$8,012,127 | \$4,857,703 | \$3,154,424 |
| Measurement, Evaluation & Research | \$1,979,340 | \$0 | \$1,979,340 | -\$1,979,340 |
| Performance Incentive | <u>\$4,529,373</u> | <u>\$0</u> | <u>\$4,529,373</u> | <u>-\$4,529,373</u> |
| Total Energy Efficiency Societal Benefits | \$55,596,398 | \$170,357,626 | \$115,039,371 | \$63,330,382 |

Notes:

¹Program Costs include weatherization and bill assistance. Societal Costs do not include bill assistance because it does not contribute to electric savings.

²APS analysis is consistent with Decision No. 68647.

G. Program-To-Date EE Societal Benefits

Table 7

Program-To-Date Energy Efficiency Societal Benefits: January 2005 - December 2013

| Program | Program Cost | Societal Benefits | Societal Cost | Net Benefits |
|--|----------------------|------------------------|----------------------|----------------------|
| Residential Program | | | | |
| Consumer Products | \$46,068,204 | \$307,265,434 | \$72,460,371 | \$234,805,064 |
| Existing Homes | \$52,957,251 | \$113,765,071 | \$ 86,246,363 | \$27,518,709 |
| New Construction | \$18,002,240 | \$92,004,003 | \$39,861,135 | \$52,142,868 |
| Appliance Recycling | \$4,674,783 | \$14,140,161 | \$3,662,261 | \$10,477,900 |
| Conservation Behavior ³ | \$2,649,182 | \$2,409,864 | \$2,590,927 | -\$181,063 |
| Multi-Family | \$3,435,314 | \$7,150,826 | \$4,622,033 | \$2,528,793 |
| Shade Tree | \$739,622 | \$4,327,652 | \$2,147,544 | \$2,180,108 |
| Low Income ^{1,2} | <u>\$15,154,560</u> | <u>\$13,195,306</u> | <u>\$13,195,306</u> | <u>\$0</u> |
| Total | \$143,681,156 | \$554,258,317 | \$224,785,939 | \$329,472,378 |
| Non-Residential Program | | | | |
| Large Existing Facilities | \$81,113,987 | \$489,858,260 | \$184,198,878 | \$305,659,382 |
| New Construction | \$19,879,550 | \$126,954,607 | \$40,692,509 | \$86,262,098 |
| Small Business | \$13,920,514 | \$79,684,525 | \$20,697,497 | \$58,987,028 |
| Building Operator Training | \$102,203 | \$424,302 | \$183,392 | \$240,910 |
| Energy Information Services | \$402,599 | \$1,993,332 | \$699,076 | \$1,294,256 |
| Schools | <u>\$13,585,129</u> | <u>\$64,996,585</u> | <u>\$28,852,164</u> | <u>\$36,144,421</u> |
| Total | \$129,003,982 | \$763,911,611 | \$275,323,516 | \$488,588,095 |
| Codes & Standards | \$195,971 | \$9,503,289 | \$5,476,501 | \$4,026,788 |
| Measurement, Evaluation & Research | \$13,013,352 | \$0 | \$13,013,352 | -\$13,013,352 |
| Performance Incentive | <u>\$ 27,723,126</u> | <u>\$0</u> | <u>\$27,723,126</u> | <u>-\$27,723,126</u> |
| Total Energy Efficiency Societal Benefits | \$313,617,587 | \$1,327,673,217 | \$546,322,434 | \$781,350,783 |

Notes:

¹Program Costs include weatherization and bill assistance. Societal Costs do not include bill assistance because it does not contribute to electric savings.

²APS analysis is consistent with Decision No. 68647.

³The Conservation Behavioral Program was cost effective in 2013. However, the PTD results includes start-up costs that will be offset over time with additional savings.

H. 2013 Performance Incentive Calculation

Table 8
2013 Performance Incentive

| Achievement Relative to DSM Goal | Performance Incentive as % of Net Benefits | Performance Incentive Capped at % of Program Costs |
|--|--|--|
| 96% to 105% | 7% | 14% |
| Net Benefits & Program Costs (Prior to PI and Codes & Standards) | \$64,705,331 | \$50,962,754 |
| Performance Incentive | \$4,529,373 | \$7,134,786 |

Notes:

¹The Performance Incentive methodology/calculation was approved in Decision No. 69663 and was modified in Decision No. 71448.

I. Net Environmental Benefits

Table 9
2013 Net Environmental Benefits

| Reporting Period | Water (Mil Gal) | SOx (Lbs) | NOx (Lbs) | CO2 (Mil Lbs) | PM10 (Lbs) |
|--------------------------------------|-----------------|-----------|-----------|---------------|------------|
| Year-to-Date: Jan - Dec 2013 | 1,558 | 21,864 | 415,421 | 4,417 | 121,359 |
| Program-to-Date: Jan 2005 - Dec 2013 | 8,014 | 112,492 | 2,137,356 | 22,726 | 624,396 |

Notes:

¹The environmental reductions are based on the net kWh energy savings of all program measures installed during the Reporting Period over their expected lifetimes.

²Some measures will result in customer water savings, which this calculation does not include. Only utility water savings are included in this calculation.

J. Demand Response Load Reduction and Energy Savings

Table 10
Demand Response Program/Initiatives¹
Load Reduction and Energy Savings: January - December 2013

| Program/Initiative | Load Reduction (MW) | Energy Savings 2013 (MWh) ² |
|-----------------------------------|---------------------|---|
| APS Peak Solutions | 28.0 | 122,640 |
| Critical Peak Pricing | 0.5 | 2,278 |
| Peak Time Rebates | 0.2 | 701 |
| Time of Use Rates & Super Peak | <u>117</u> | <u>516,840</u> |
| Total³ | 145.9 | 642,459 |

Notes:

¹No load reduction was assumed for the HEI Pilot because the savings are unknown at this time.

²Energy Savings (MWh) = Load reduction (MW) X (8,760/2) hours X 50% load factor.

³Per ACC Decision No. 71436, the credit for demand response and load management peak reductions shall not exceed 10% of the EE standard for any year.

Terms and Definitions Used in Tables 1-10

Consumer Education: Funds allocated to support general consumer education about EE improvements and programs.

Free-riders: Program participants who would have installed the energy-efficient DSM measures anyway, even if the program were not in operation.

Gross Savings: Demand and energy savings related to the DSM programs prior to accounting for reductions for free riders and additions for spillover.

Measurement, Evaluation & Research ("MER"): Activities that will identify current baseline energy efficiency levels and the market potential of DSM measures, perform process evaluations, verify that energy-efficient measures are installed, track savings, and identify additional EE research.

Net Savings: Demand and energy savings related to the DSM programs after accounting for reductions for free-riders and additions for spillover.

Performance Incentive: Percentage share of DSM net economic benefits (benefits minus costs), capped at a percent of total DSM expenditures, depending on the percent of MWh savings goal achieved.

Planning and Administration: APS's costs to plan, develop and administer programs, which includes management of program budgets, oversight of the RFP process and implementation contractor, program development, program coordination and general overhead expenses.

Program Implementation: Program delivery costs associated with implementing the program - includes implementation contract labor and overhead costs, as well as other direct program delivery costs.

Program Marketing: Expenses related to program marketing and increasing DSM consumer awareness (direct program marketing costs as opposed to general consumer education).

Rebates and Incentives: Money allocated for customer rebates and incentives, installation of low income weatherization and low income bill assistance.

Spillover: Refers to indirect energy impacts of the program and estimated savings from customers who implement energy-efficient savings strategies as a result of knowledge of APS's program but who do not receive an incentive through the program.

Training and Technical Assistance: Cost of EE training and technical assistance.

IV. Residential Energy Efficiency Programs

1. Consumer Products Program

Description

The Consumer Products Program has two elements – Residential Lighting and Residential Pool Products. The Residential Lighting element of the program promotes high-efficiency ENERGY STAR® Compact Fluorescent Light Bulbs (“CFLs”). CFLs use an average of 75% less energy than standard incandescent bulbs and last up to ten times longer, typically saving consumers up to \$40 in energy costs over the life of each bulb. The program offers discounts on CFLs through cooperative agreements with retailers and lighting manufacturers. This provides consumers with reduced retail prices for CFLs at local lighting retailers, with prices typically at or below \$0.99 per bulb for standard 60 watt equivalent CFLs.

The Energy-Efficient Pool Pump element of the Consumer Products program is designed to improve residential pool operations while saving energy and maintaining equivalent or better standards for pool sanitation and cleanliness. The program promotes the installation and optimal calibration of energy-efficient variable-speed pool pumps with a rebate of \$270 per pump.

Program Goals, Objectives and Savings Target

The goal of the CFL program element is to promote the purchase of high-efficiency CFLs and increase the awareness and knowledge of retailers and consumers on the benefits of ENERGY STAR® rated lighting products.

The goal of the Energy-Efficient Pool Pump program element is to promote the purchase of high-efficiency variable-speed pool pumps. In a typical Arizona home with a pool, the pool pump energy use can make up a substantial portion of annual energy use, often second after heating and cooling costs.

APS’s goal for the overall Consumer Products Program, including both the CFL and variable-speed pool pump elements of the program, was to reduce peak demand by 14.5 MW and reduce energy consumption by 134,000 MWh annually and 929,700 MWh over the life of the measures expected to be installed in 2013.

Levels of Customer Participation

During this Reporting Period, the energy-efficient lighting element of the program resulted in sales of 3,139,503 CFLs through participating retail locations. In addition, APS distributed 56,319 CFLs during community outreach events, for a combined total of 3,195,822 CFLs during 2013. In 2013, approximately 325 retail outlets participated throughout the APS service territory. Participating retailers during this Reporting Period included: 99 Cents, Ace Hardware, Big Lots, Costco, Dollar Tree, Goodwill Industries, Home Depot, Lighting Unlimited, Lowe’s, Sam’s Club, Target, and Wal-Mart.

The Pool Pump program element currently includes over 200 participating pool retailers, distributors, and pool builders. During this Reporting Period, a number of pump calibration training seminars were held with a total of more than 150 pool professionals trained. In addition, program representatives routinely conducted retail visits to inform pool professionals and provide updates regarding the APS rebate program.

The Pool Pump program element provided rebates for 6,250 variable-speed pool pumps purchased by customers during this Reporting Period. Additionally, while not actively promoting incentives on seasonal pool pump timers in 2013 because the primary

manufacturer went out of business in early 2012, one APS customer found a single qualifying timer at one of the participating pool retailers during the year, so they were provided with a rebate.

Evaluation/Monitoring Activities and Research Results

- Continued to review and update CFL and Pool Pump Measure Analysis Spreadsheets and Analytic Database.
- Updated savings and cost assumptions for Light Emitting Diode ("LED") and 2x Incandescent measure offerings.
- Held Focus Group of pool technicians to identify impacts of training on calibration of program variable speed pumps.
- Continued research to determine net-to-gross effects and market influence for pool components of the program.

Consumer Education and Outreach

The program conducted retailer visits and retailer trainings during the Reporting Period to educate retail sales staff, assess inventories of merchandise, check point of purchase displays, address availability of qualified product, and communicate with retail sales staff.

In addition to the bulb sales at retail locations, APS has purchased a supply of CFLs to use for the low income program and for customer education and awareness building purposes. APS uses these bulbs for direct installation through the APS Low Income Weatherization program (two bulbs provided for each home that is weatherized) and to hand out at local community events and other opportunities to educate the public about CFLs.

APS conducted 165 community education and customer outreach events during this reporting period to promote the CFL program and educate customers about APS programs, rebates, and opportunities for saving energy and money. For a comprehensive list of events and dates, please refer to the work-papers provided to ACC Staff.

Advertising and article placements for the CFL program element included the following:

- Maintained the "CFL Calculator" available at: www.aps.com/main/various/CFL/calculator.html?source=hme providing customers a way to predict the savings they could achieve by switching to CFLs. The calculator provides recommendations for which type of CFL should be used to replace each bulb in the home and then the tool will print out a custom shopping list.
- CFL radio spots aired April through September on local sports broadcasts and local news talk radio as part of the *Options* campaign.
- Information on the homepage of aps.com including a listing of all participating retail locations and a retail locator function that shows the closest stores throughout the service area based on entering a zip code.
- Articles in the Lifestyles Residential newsletters/e-newsletters (English & Spanish):
 - Lighting – February, May, June, October, November and December.
- Point of sale signage at participating Lighting and Pool retail locations.
- Held a Buy One Get One Free (BOGO) retail event in three local Home Depot Stores in October 2013.

In addition, the program conducted a wide range of marketing and advertising activities to raise awareness about variable-speed pool pumps including:

- Provided program brochures for consumers at outreach events.

- Ran articles in the Lifestyles Residential newsletters/e-newsletters (English & Spanish):
- Pools – March, May, July
- Maintained program web pages on aps.com including basic information, online application forms, video content, answers to frequently asked questions, and a list of participating Pool Retailers.
- Produced collateral for point-of-sale materials, including many different styles and sizes of store signage.

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Due to the fact that there are currently no seasonal pool timers available in the market that meet the program requirements at this time, APS proposes that this measure should continue to be suspended.

Program Modifications/Terminations

No program or measures were modified or terminated during this Reporting Period.

Other Significant Information

APS continued a CFL recycling program in partnership with participating retailers and Veolia Environmental Services, which operates a recycling facility in Phoenix. Customers may take their burned out CFLs to participating retail locations (including select Ace, True Value and Home Depot stores) throughout the APS service territory for free recycling. Retailers collect the CFLs and then send them to Veolia, where more than 99% of all materials, including the trace amounts of mercury in CFLs, are reused.

MER Adjusted Gross kW and kWh Savings for CFL's

| Units Incentivized | Units In Service In APS Territory | Annual Gross MWh Savings | Lifetime Gross MWh Savings | Annual kW Demand Savings |
|---------------------------|--|---------------------------------|-----------------------------------|---------------------------------|
| 3,195,822 | 2,696,763 | 144,719 | 879,643 | 14,160 |

Note: Please refer to APS's workpapers for the complete list of bulbs and units for this Reporting Period. The difference between "units incentivized" and "units in service" in APS service territory accounts for 1) bulbs installed outside of APS territory and 2) bulbs not yet placed into service.

MER Adjusted Gross kW and kWh Savings for Pools Measures

The program provided the following rebates to participating APS Residential customers during this Reporting Period.

| Measure | Number of Units | Measure Life (yrs.) | Total Annual MWh | Total Lifetime MWh | Total kW Demand |
|---------------------|------------------------|----------------------------|-------------------------|---------------------------|------------------------|
| Variable Speed Pump | 6,250 | 10/12.5 | 9,513 | 106,572 | 2,045 |
| Timers | 1 | 10 | 1 | 11 | 0 |
| Total | 6,251 | | 9,514 | 106,583 | 2,045 |

Note: Measure life for pool pumps changed midyear due to updated MER results. MER savings are adjusted for line losses (Energy 7.0%, Demand 11.7%) and a capacity reserve factor of 15%.

Total savings from the Consumer Products Program during this Reporting Period are shown in the table below.

| Measure | Total Annual MWh | Total Lifetime MWh | Total kW Demand |
|----------------|-------------------------|---------------------------|------------------------|
| CFLs | 144,719 | 879,643 | 14,160 |
| Pools | 9,514 | 106,572 | 2,045 |
| TOTAL | 154,233 | 986,215 | 16,205 |

Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 6 and 8.

2. Appliance Recycling Program

Description

The program educates APS customers regarding the energy savings that can be achieved by recycling their old, operating, extra refrigerator or freezer. These appliances use a great deal of energy and by turning them in for recycling, customers can save up to \$100 per year on their electric bill. Many refrigerators and freezers being replaced are still functioning and often end up as secondary units in basements and garages, or are sold in the used appliance market. This program provides customers an incentive to remove old, inefficient appliances from the grid.

APS customers with an old operating extra refrigerator can receive a \$30 rebate with free pick-up service at the customers' convenience that can be scheduled either online at aps.com/turnitin or by calling toll free 877-514-6654. APS partners with JACO Environmental, Inc. to provide the free pick up and recycling service.

The APS Appliance Recycling Program began on February 1, 2010. This program was approved by Commission Decision No. 71444 (December 23, 2009). The primary focus for 2013 has been on program awareness and marketing. The marketing strategy emphasizes customer education about the inefficiency of old or second working refrigerators or freezers, the \$30 rebate, and the free pickup service provided.

As a result of creating this program, a recycling facility has been established in Phoenix where up to 95% of appliance elements are recycled and used to manufacture other products. Additionally, 20 new "green" jobs were created to staff and operate the new recycling facility. During the recycling process, JACO Environmental safely disposes of all refrigerators and freezers preventing the release of hazardous chemicals into the environment.

Program Eligibility Requirements:

- Must be a current APS customer and the unit must be owned by customer.
- Refrigerator/freezer must be operable (maintain a cold temperature).
- Refrigerator/freezer must be plugged in (cold inside) and empty.
- Refrigerator/freezer must be a standard size (between 10 – 30 cubic feet).
- There must be a clear pathway to pick up and remove appliance.
- There is a maximum of two units per household per year.
Someone 18 years or older must be present to sign and release unit.

Program Goals, Objectives and Savings Targets

The program objective is to educate APS customers that their second older, working refrigerator or freezer in the garage or laundry room is costing them an additional \$100 per year in energy costs to operate. Refrigerators and freezers today are much more energy-efficient than models built prior to 1993, with models sold today using about 1/3 the energy of older units.

The 2013 program goal was to recycle 9,250 units, resulting in capacity savings of 1.7 MW and energy savings of 11,700 MWh annually and 70,200 MWh over the expected lifetime.

Levels of Customer Participation

During this Reporting Period, APS recycled 7,113 refrigerators and freezers, and paid \$213,330 in incentives to customers. Units were picked up across APS's service territory statewide. Year-end volume totals came in at 77% of program goal.

JACO Environmental entered into a partnership with Sears in November 2010. The purpose of the agreement was to add value and convenience to customers when they purchase a new refrigerator or freezer. At the point of sale, the customer will receive a special sticker to place on their old unit providing the ability to track APS retail units separately.

Upon delivery of a new refrigerator or freezer, Sears will pick up the customer's old (now secondary) appliance, saving them the hassle of making another appointment to schedule a refrigerator recycling pickup. This ensures that the old unit does not end up in the secondary market, or a garage or laundry room plugged in. The customer receives the \$30 rebate from JACO through normal operating channels. These units are taken to a Sears containment facility where JACO picks up the stickered refrigerators and freezers once a week for recycling and processing. During this Reporting Period, APS recycled 691 units picked up through Sears.

Evaluation/Monitoring Activities and Research Results

- Continued to review and update program Measure Analysis Spreadsheets and the Analytic Database.
- Continued review of the implementation program tracking database.
- Completed research to determine customer satisfaction, hours of use, and process improvements.

Consumer Education and Outreach

- Program marketing efforts during this Reporting Period include the following:
 - Bill inserts – June & August
 - Newsletter articles – January, May, July, Sept, & November
 - E-mail newsletters – January, May, July, Sept & November
 - Web banners (English & Spanish) October/November
 - IVR messaging during APS Call Center hold time
 - Radio advertising (English/Spanish) - June through September

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Program Modifications/Terminations

No program or measures were modified or terminated during this Reporting Period.

Other Significant Information

Based on customer feedback, APS has developed and implemented a process that provides customers the option to donate their \$30 refrigerator recycling rebate to The Salvation Army's Project S.H.A.R.E. (Service to Help Arizonans with Relief on Energy). On average, 4% of participating customers (251 customers) donated their rebates for a total of \$7,530 donated to the Salvation Army in 2013 from this program.

MER Adjusted Gross kW and kWh Savings

| Program | Number of Unit Recycled | Total Annual MWh Savings | Est. Measure Life (yrs.) | Total Lifetime MWh Savings | Total Net kW Savings | Total MW Savings |
|----------------|--------------------------------|---------------------------------|---------------------------------|-----------------------------------|-----------------------------|-------------------------|
| Refrigerators | 6,283 | 7,982 | 6 | 47,890 | 1,156 | 1.2 |
| Freezers | 830 | 805 | 6 | 4,830 | 116 | 0.1 |
| TOTAL | 7,113 | 8,787 | | 52,720 | 1,272 | 1.3 |

Note: MER savings are adjusted for line losses (Energy 7.0%. Demand 11.7%) and a capacity reserve factor of 15%.

Costs Incurred

Costs incurred for this program during this Reporting Period are listed below:

| DSM Program | Incentives | Training & Technical Assistance | Consumer Education | Program Implementation | Program Marketing | Planning & Admin. | Program Total Cost |
|----------------------------|-------------------|--|---------------------------|-------------------------------|--------------------------|------------------------------|---------------------------|
| APS Refrigerator Recycling | \$213,330 | \$0 | \$0 | \$540,609 | \$181,485 | \$70,735 | \$1,006,159 |

| DSM Program | Implementation (Contractor) | Implementation (APS) | Program Implementation |
|------------------------|------------------------------------|-----------------------------|-------------------------------|
| Refrigerator Recycling | \$522,871 | \$17,738 | \$540,609 |

Commission Decision No. 73089, requires APS to report spending for non-EE measures in the Appliance Recycling Program. There were no non-EE measures or associated spending in this program during this Reporting Period.

Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 6 and 8.

3. Residential New Home Construction

Description

This program promotes high-efficiency construction practices for new homes. It offers incentives to builders that meet the program's EE standards. The program emphasizes the whole building approach to improving EE and includes field testing of homes to ensure performance. Participating builders are trained to apply building science principles to assure that high efficiency homes also have superior comfort and performance. The program also provides education for prospective homebuyers about the benefits of choosing an energy-efficient home and the features to consider.

The program takes advantage of the national ENERGY STAR® brand name, and promotes the U.S. Environmental Protection Agency ("EPA") ENERGY STAR® label to prospective homebuyers. To encourage builders to meet the program's high-efficiency standards, APS provides builder incentives of \$1,000 per home for ENERGY STAR version 3 compliant homes. To encourage builders to meet even higher EE standards, the program also offers a second tier incentive of \$1,500 per home for builders that meet the higher savings level of Home Energy Rating System ("HERS") 60.

Program Goals, Objectives and Savings Targets

The program objective is to increase the penetration of homes built to high-efficiency standards. The rationale for this program is that residential new construction in the APS service territory, particularly the Phoenix metro area, has historically been one of the biggest drivers of APS's system load growth. It is more cost-effective to work with builders to implement EE at the time of construction rather than to attempt to retrofit efficiency after a home has been built. For many new home measures, such as building envelope improvements, the benefits of EE upgrades will be sustained for the life of the home to produce cost-effective savings.

APS's analysis of this program, as filed in the 2013 APS DSM Implementation Plan, estimated that the EE savings expected to result from the Residential New Construction ("RNC") Program in 2013 could reduce peak demand by about 12.3 MW, while saving 23,800 MWh annually, and 476,500 MWh over the life of the measures expected to be installed in 2013.

Levels of Customer Participation

During this Reporting Period, APS signed 4,742 homes that are committed to being built to ENERGY STAR® V3 program standards and to being built to the ENERGY STAR® V3 – HERS 60 program standards. This steady growth in signed homes is a strong indicator that the new home market is recovering. At the end of this Reporting Period, there were 52 homebuilders and 228 subdivisions currently participating. The program currently includes ENERGY STAR® communities throughout the APS service territory including the Phoenix metro area, Yuma, Casa Grande, Florence, Prescott, Verde Valley, and Flagstaff.

APS paid a total of 3,870 homebuilder incentives and 3,845 \$50 rater incentives on participating homes completed during the reporting period. Specifically, APS has paid:

- 3,446 ENERGY STAR Version 3

- 424 ENERGY STAR Version 3 – HERS 60

Since the start of this program in 2006, APS has paid incentives on 15,935 ENERGY STAR® homes.

During this Reporting Period, APS held 13 builder and trades training sessions. The training, called "Success with ENERGY STAR®", teaches builders and their subcontractors about techniques for improving construction details that impact efficiency and that allow the home to pass ENERGY STAR® inspections. The training includes detailed customized construction photos and process checklists to ensure implementation accuracy at the job site. In addition, APS provided sales training and/or technical training assistance to numerous Arizona builders during this Reporting Period.

Evaluation/Monitoring Activities and Research Results

- Maintained and update Residential New Construction Measure Analysis Spreadsheets and Analytic Database.
- Developed HERS rater interview guide to understand rating processes, incremental costs, and new building practices employed by program participants to achieve Tier 1 and Tier 2 program requirements. Fielding of interviews is planned for early 2014.
- Conducted statistical billing records analysis of program homes to determine an Energy Use Index (kWh/sq ft) associated with HERS ratings in APS service territory. To be completed early in 2014.
- Assessed impact of new building code adoptions across all APS jurisdictions on energy consumption of non-participant homes.
- Continued support on data requirements of implementation tracking system to meet evaluation needs.

Consumer Education and Outreach

Program marketing and education efforts during this Reporting Period include the following:

- *Television* – APS developed and aired a new ENERGY STAR homes TV content for NewHomeSource TV that aired on channel 3. The hosted segments tout the energy savings and benefits of ENERGY STAR homes.
- *Online Ads* – APS developed banner ads that ran all year on newhomesource.com. Newhomesource.com is one of the most used web resources for customers searching for new homes listings and information on local builders.
- *Bill Inserts/Newsletter Articles* – APS featured articles about ENERGY STAR homes in the February issue of the 'Lifestyles' newsletter sent to APS residential customers.
- *Realtor Publication* – Monthly publication lists all new home communities and homes for sale in the metro Phoenix area. APS advertising includes banner ads highlighting all participating ENERGY STAR communities.
- *2013 Homebuilders Association Member Directory* - the back cover ad to promote the APS ENERGY STAR® Home program to builders
- *Provided Sales Agent Training* - for APS ENERGY STAR® Home builder sales staff.
- *Distributed APS ENERGY STAR® Home Program Sales Book* - for builder sales agents to use in selling the features of ENERGY STAR® Homes to prospective homebuyers.
- *Distributed APS ENERGY STAR® Model Home Materials* - for builders to put in model homes to advertise the different features and benefits of an ENERGY STAR® homes.

- Distributed APS Energy Cost Brochures – customized point of sale brochures that describe APS ENERGY STAR® Homes features and outline the approximate annual and monthly energy costs per model.
- *Distributed a homebuyer brochure* - that is targeted to new buyers and discusses the features and benefits of an ENERGY STAR® home. The brochures are being distributed at community events and at participating builders' model home sales offices.
- *Construction Corner at aps.com* - web pages targeted to Arizona homebuilders. Features promotion of program benefits for builders.

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Program Modifications/Terminations

No programs or measures were modified or terminated during this Reporting Period.

Other Significant Information

In recognition of the ongoing success of the APS EE program portfolio and the APS ENERGY STAR® Homes and Home Performance with ENERGY STAR Programs, APS was selected by EPA as a 2013 ENERGY STAR® Partner of the Year, Sustained Excellence Award winner. This is the highest award that can be earned by an ENERGY STAR® partner, and is bestowed on partners who show sustained excellence in their commitment to EE and whose organization is a national model of best practices in advancing EE. APS has now earned ENERGY STAR® awards for seven consecutive years.

In October, APS participated in the Southwest Builder Show trade expo and met with builders, HERS raters, and other industry partners. APS also worked to schedule and plan events with the Homebuilders Association of Central Arizona to discuss the ENERGY STAR® Version 3 specifications and help purchasing managers with creating scopes of work for ENERGY STAR features.

Version 3 specifications and help purchasing managers with scope building for ENERGY STAR features.

MER Adjusted Gross kW and kWh Savings

| Measure | # of Homes Completed | Total Annual MWh Savings | Est. Measure Life (yrs.) | Total Lifetime MWh | Total MW Savings |
|------------------------------------|-----------------------------|---------------------------------|---------------------------------|---------------------------|-------------------------|
| APS ENERGY STAR HOMES V3 | 3,446 | 16,846 | 20 | 336,914 | 8.49 |
| APS ENERGY STAR HOMES V3 - HERS 60 | 424 | 2,582 | 20 | 51,633 | 1.24 |
| TOTAL | 3,870 | 19,427 | | 388,546 | 9.73 |

Note: The final savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%.

In addition, program consumer education and homebuilder training efforts produce significant additional energy savings and benefits that are not quantified here.

Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 6 and 8.

Costs Incurred

Costs incurred for this program during this Reporting Period are listed below:

| Program | Incentives | Training & Technical Assistance | Consumer Education | Program Implementation | Program Marketing | Planning & Admin. | Program Total Cost |
|----------------------------|-------------------|--|---------------------------|-------------------------------|--------------------------|------------------------------|---------------------------|
| Res. New Home Construction | \$4,276,250 | \$65,258 | \$790 | \$348,979 | \$322,131 | \$193,383 | \$5,206,791 |

| DSM Program | Implementation (Contractor) | Implementation (APS) | Program Implementation |
|----------------------------|------------------------------------|-----------------------------|-------------------------------|
| Res. New Home Construction | \$0 | \$348,979 | \$348,979 |

4. Residential Existing Homes Heating, Ventilation, and Air Conditioning Program

Description

The Residential Existing Homes Heating, Ventilation, and Air Conditioning Program ("Residential HVAC") is divided into two distinct elements, 1) HVAC measures and 2) Home Performance with ENERGY STAR® ("HPwES") measures.

The HVAC measures use a combination of financial incentives, contractor training and consumer education to promote the proper installation and maintenance of energy-efficient HVAC systems. The Air Conditioner ("AC") Rebate, Duct Test and Repair, and Residential Diagnostic measures support energy-efficient Residential air conditioning and heating systems along with the proper installation, maintenance and repair of these systems.

The HPwES measures promote a whole house approach to EE by offering incentives for improvements to the building envelope of existing Residential homes within the APS service territory. HPwES includes measures that improve the EE of the home with air sealing, insulation, faucet aerators, and low flow showerheads.

Both elements of the Residential Existing Homes HVAC program provide APS customers with referrals to contractors who meet strict program requirements for professional standards, technician training, and customer satisfaction.

The two elements are discussed individually below:

HVAC Measures - AC Rebates, Duct Test and Repair and Residential Diagnostic

The AC Rebate with Quality Installation ("QI") measure offers financial incentives to homeowners for buying energy efficient HVAC equipment (≥ 13 SEER/10.8 EER), that is installed in such a manner that it meets the program requirements for air flow, refrigerant charge and sizing. The Duct Test and Repair ("DTR") measure provides financial incentives to customers for having their HVAC system's duct work tested for leakage and repaired. APS also has a Residential Diagnostic ("RD") measure to provide a financial incentive for an advanced diagnostic tune-up on existing air conditioning and heat pump equipment to ensure that it operates more efficiently. The main components of this measure are the correction of the refrigeration charge, leak repair, condenser coil cleaning and air flow verification.

Program Goals, Objectives and Savings Targets

The HVAC component of the program uses a combination of financial incentives, contractor training and consumer education to promote high-efficiency HVAC systems. The program focus is the proper installation of equipment, increasing existing equipment efficiency, and the testing and repair of duct work. in existing Residential homes.

APS's 2013 DSM Implementation Plan estimated that the EE savings expected to result from the HVAC element of the program could reduce peak demand by approximately 10.0 MW, 14,600 MWh annually and 162,200 MWh over the life of the measures expected to be installed in 2013.

Levels of Customer Participation

- A total of 12,379 rebates were paid through the HVAC element of the program in 2013. APS has paid:
 - 8,741 of the \$270 AC rebates for all SEER/10.8 EER equipment within first quarter ("Q1").
 - 795 of the \$100 Residential Diagnostic rebates.
- Duct test and repair participation levels in 2013.
 - 2,843 DTR reported rebates. There was 3,392 total rebates, 549 were for tests without repairs. Only the repair (2,843) rebates are used for calculating the demand and energy savings shown in the savings table below.
- There are currently 165 contractors that can offer the APS AC Rebate of which 138 are APS Qualified Contractors. There are 27 Rebate Eligible contractors that entered the program through the application process approved by the ACC in October 2009, which does not require membership in the Arizona Heat Pump Council. There are currently 31 contractors that can offer the rebates outside the Phoenix metropolitan ("metro") area serving Arizona City, Aquila, Casa Grande, Camp Verde, Chino Valley, Clarkdale, Coolidge, Congress, Cottonwood, Eloy, Flagstaff, Florence, Jerome, Kingman, Lake Havasu, Parker, Payson, Prescott, Prescott Valley, San Luis, Sedona, Star Valley, Wickenburg and Yuma.
- 1,816 (contractor) students participated in APS sponsored training courses, in both metro and non-metro training classes, to meet APS Qualified Contractor program training requirements for 2013.
- The APS Energy Answer Line answered 3,199 AC Rebate and 820 Duct Test and Repair calls from customers seeking HVAC service, repair or replacement of their home HVAC system in this Reporting Period.
- There are currently 58 active Duct Test and Repair contractors. There are ten such contractors outside of the Phoenix area, serving Lake Havasu, Sedona, Camp Verde, the Prescott area and Yuma.
- The APS AC Rebate webpage had 18,308 visits, 6,157 visits for the DTR webpage and 8,035 for the Residential Diagnostic webpage.
- There were 6,386 customers who finished the APS Energy Survey home energy audit at aps.com during this Reporting Period. Energy savings are not currently being attributed to customers who complete the on-line audit.

Evaluation and Monitoring Activities and Research Results

- Maintained and updated RHVAC Measure Analysis Spreadsheets and Analytic Database including Quality Installation, Duct Repair, and Advanced Diagnostic Tune Up.
- Developed savings and cost assumptions for duct test and repair in mobile home units.
- Reviewed and analyzed performance data collected and submitted by contractors to refine savings assumptions for Advanced Diagnostic Tune Up measure.
- Continued analysis of field meter data for Evaporative Cooling technologies.
- Conducted a number of process activities – including contractor mystery calls, contractor in-depth interviews, and participating and non-participating customer surveys – to assess customer and contractor satisfaction, barriers to participation, incremental costs, and potential program improvements for the advanced diagnostic and tune up program.

Consumer Education and Outreach

Residential Existing Home HVAC program marketing and consumer/contractor education efforts for this Reporting Period include:

- TV ads promoting the program as part of the APS "Options" ran on multiple stations.
- Radio ads to promote the program ran on KTAR-AM/FM, KFYI-AM, KDKB-FM, KESZ-FM, KMLE-FM, KMXP-FM, KNIX-FM, KOOL-FM, KPKX-FM, KSLX-FM, KYOT-FM, KBKM-AM/FM and Spanish stations KHOT, KOMR, KOMR, KLNZ, KNAI and KCEC (Yuma).
- Articles in APS Lifestyles Newsletter for February (Ducts), April (Residential Diagnostic), May (AC), June (AC), August (AC), and November (Ducts).
- Online Banner Ads ran on MNI Digital Ad Network-English/Spanish and the web sites for the Arizona Diamondbacks, Phoenix Suns, Latino Perspectives, Telemundo and Univision.
- Presentations on the APS Residential DSM programs to numerous community groups. Most of the consumer education events listed under Consumer Products includes information on the AC Rebate and other APS Residential programs.
- The aps.com homepage prominently features APS EE and renewable energy programs. These programs are grouped in one section of the homepage entitled "Save Energy and Money."

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period

Program Modifications/Terminations

No programs or measures were modified or terminated during this Reporting Period.

Costs Incurred

Costs incurred for this program during this Reporting Period are listed below:

| Program | Incentives | Training & Technical Assistance | Consumer Education | Program Implementation | Program Marketing | Planning & Admin. | Program Total Cost |
|--|-------------|---------------------------------|--------------------|------------------------|-------------------|-------------------|--------------------|
| Res. Existing HVAC (AC Rebates, DTR, RD) | \$3,240,378 | \$132,848 | \$189,684 | \$1,176,624 | \$156,048 | \$252,564 | \$5,148,146 |

| DSM Program | Implementation (Contractor) | Implementation (APS) | Program Implementation |
|--------------------|-----------------------------|----------------------|------------------------|
| Res. Existing HVAC | \$1,119,780 | \$56,844 | \$1,176,624 |

MER Adjusted Gross kW and kWh Savings

| Incentive Type | Number of Units | Total Annual MWh Savings | Est. Measure Life (yrs.) | Total Lifetime MWh | Total Coin. MW Savings |
|------------------------|-----------------|--------------------------|--------------------------|--------------------|------------------------|
| AC w/QI, \$270 | 8,741 | 8,630 | 10 | 86,300 | 4.7 |
| Residential Diagnostic | 795 | 448 | 6 | 2,688 | 0.3 |
| Duct Test and Repair* | 2,843 | 2,984 | 18 | 53,712 | 2.9 |
| TOTAL | 12,379 | 12,062 | | 142,700 | 7.9 |

Note: DTR total number of units shows only number of rebates paid for repair work. The rebates paid for just the duct test are not included. MER savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%.

5. Home Performance with ENERGY STAR®

Description

The HPwES program offers home owners a \$99 comprehensive home energy checkup to help identify ways to improve EE and comfort throughout the home. This program element offers a direct install feature that includes up to 10 CFLs, three faucet aerators, and one low-flow showerhead that are installed at the time of the checkup. Additional financial incentives are available for duct sealing, air sealing, insulation, and shade screens, once a home owner has completed an HPwES checkup. After measures are installed, rigorous testing and quality assurance protocols then verify installation quality and performance.

Program Goals, Objectives and Savings Targets

The HPwES measures promote a whole house approach to EE by offering financial incentives for improvements to the building envelope of existing Residential homes within the APS service territory.

APS's analysis of this program, as filed in the 2013 APS DSM Implementation Plan, estimates that the EE savings expected to result from the Home Performance with ENERGY STAR Program element in 2013 could reduce peak demand by 5.59 MW, while saving 10,025 MWh annually, and 148,045 MWh over the life of the measures expected to be installed in 2013.

Levels of Customer Participation

During this Reporting Period:

- A total of 4,722 contractor rebates were paid through HPwES for completed and approved energy audits. Each home that received a \$99 home energy audit, also received a direct install bag containing 1 low-flow showerhead, 3 low-flow aerators and ten 13 watt compact florescent light bulbs. Note: Low-flow faucet aerators were discontinued in September, 2013.
- The APS HPwES program paid rebates for measures installed in 1,853 participating homes. This indicates that 39% of homes that completed an audit during the Reporting Period took steps to install additional measures as a result of the audit. The total number of customer rebates paid was 3,441. Specifically, APS has paid:
 - 1,928 duct sealing and repair rebates.
 - 72 air sealing only rebates.
 - 1,340 air sealing and attic insulation rebates.
 - 112 shade screens rebates prior to suspension of this measure. See Program Modifications/Termination section for additional details.
- There are currently 52 qualified HPwES contractors. Contractors must complete the Building Performance Institute's Building Analyst certification and undergo a mentorship prior to becoming active. HPwES currently serves Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, and Yuma counties.
- During this reporting period, the APS Home Performance answer line received 1,192 referral inquires by telephone.

Evaluation/Monitoring Activities and Research Results

- Continued to review and update program Measure Analysis Spreadsheets and Analytic Database Provided guidance on Home Performance components of the program design tool in support of the implementation plan.
- Continued review of program implementation data to support energy model assumptions.
- Continued billing records analysis to determine potential impacts from audit only participants.
- Conducted interviews with a sample of Home Performance contractors to refine measure cost estimates.

Consumer Education and Outreach

HPwES marketing and consumer/contractor education efforts for this Reporting Period include:

- Distribution of an HPwES brochure through community events, trade allies, contractors, and other industry partners.
- Using the APS call center, we held a call center campaign to promote home energy checkups to qualified customer that called during the summer months.
- Launched a new customer education video on aps.com/checkup and the APS YouTube channel.
- A stand-alone website is available at www.azhomeperformance.com.
- Event based marketing with the Suns, Diamondbacks, and several trade shows.
- Radio ads to promote the HPwES on KMXP, KPKX, KNIX, KSLX, KESZ, KMLE, KOOL, KUPD in Phoenix, and sister stations in Coconino and Yavapai counties.
- Articles in: APS Lifestyles Bill Insert for July and August.
- Presentations on the APS Residential DSM programs to numerous community groups. Most of the consumer education events listed under Consumer Products included information on the HPwES and other APS Residential programs.

Problems Encountered and Proposed Solutions

During this Reporting Period the Home Performance with ENERGY STAR program had a benefit cost ratio of less than 1.0, using the current methodology for calculating the present value of benefits and costs to determine benefit-cost ratios, as ordered in Commission Decision No. 73089.

APS believes that the reduction in cost effectiveness during this reporting period was a temporary situation and that there are several solutions that APS has already put in place and will continue working on to make the program cost effective for 2014 and beyond. Therefore, APS believes that the program should be continued at this time.

The Home Performance with ENERGY STAR program is an important program to assist residential customers in improving the energy efficiency of their homes and in supporting a local network of home performance contractors who can help deliver efficiency services. It has taken significant time and resources to develop the program's infrastructure, and the program has achieved national recognition for excellence in program delivery. The program provides important services to help customers identify opportunities for energy savings in their homes. In addition, to electric energy savings, the program also generates significant

additional savings for customers, such as natural gas and water savings that are not currently being monetized in the cost effectiveness analysis.

In 2013, APS incurred a number of one-time costs associated with transitioning the program's energy auditing software tools to be more user friendly for both APS customers and participating contractors. The new EnergySavvy software (described in the *Program Modification* section), will allow us to dramatically increase program production while decreasing administration costs. Additionally, the EnergySavvy system automates a number of administrative functions that will reduce the total number of implementation hours attributed to the program.

In 2014, using the new auditing software platform, we expect to increase energy audit conversions to achieve greater energy savings per participating home. In addition to the software enhancement, APS proposes improvements in three critical areas that will increase savings and improve cost effectiveness: Customer Acquisition, Contractor Tools, and Customer Maintenance.

Customer acquisition strategies in 2014 will utilize a mix of online tools and targeted marketing efforts. We will utilize program data to identify APS customers with a high potential for savings and who are good candidates for a whole home retrofit. These direct marketing efforts will help increase participation at the lowest possible cost. In addition, we will market the new EnergySavvy Energy Analyzer software to a much broader customer base. As described below this tool will help customers self-select into the program based on opportunity for savings. These two effort combine should increase savings

The recent software enhancements will also benefit participating contractors, saving time and job cost. Contractors now have choice in the modeling and customer education tools they want to use. With these new tools, contractors can work more quickly in the field and have more control over the assessment reports each customer receives as a part of their in-home energy audit. This will help contractors better interact with customers to educate them on the best ways to save energy in their homes. This improvement was based on ongoing feedback with contractors regarding ways to improve their conversion rate and provide even higher quality audit and retrofit services. APS is also working on program messaging to further aid in enhancing contractor success. Initial results have been promising and contractors are indicating early success.

Finally, the new EnergySavvy tool gives APS the ability to engage in ongoing outreach and education activities with participating customers. Each customer now has a project dashboard that helps them track their progress and receive digital coaching throughout their program participation. APS has also deployed a series of educational email communications that encourage customers to proceed to the next steps in their home energy improvement process. This system also contains a process tracking function so that the program management team can identify reasons for program drop off and develop targeted program improvements to increase program conversation rates.

APS understands that a review of program cost effectiveness will be the subject of discussions with the Commission.

Program Modifications/Terminations

During the Reporting Period APS discontinued the shade screen and direct install faucet aerator measures. These measures were discontinued in 2013 due to cost effectiveness or a lack of customer demand. If these measures become cost-effective in the future, APS may propose to reinstate them.

To improve the air sealing measure cost effectiveness, APS set an existing leakiness threshold for air sealing rebate eligibility. Effective March 1, 2013, a participating home must have an existing leakiness of at least 16 ACH₅₀ (Air Changes Per Hour at 50 pascals of pressure) in order to qualify for an air sealing incentive.

In November, APS installed a new software package for the Home Performance with ENERGY STAR program, provided by EnergySavvy. With this new software suite, customers now have access to a new online audit tool called Energy Analyzer to help them identify energy efficiency products and services that are right for their home. This also allows the Company to help our customers better self-select for the Home Performance with ENERGY STAR program, by only recommending the program when they have above average usage for their housing type. If they are already efficient, we recommend other products and services that can better suit their needs.

Customers who choose to participate in Home Performance will now also have access to a "My Project" dashboard. This tool will allow a customer to track their project status, review their program documents, and receive digital coaching throughout the project. With this new dashboard, we can not only increase customer satisfaction, but deploy engagement strategies to increase measure adoption and reduce program dropout.

In addition to the customer tools, the new EnergySavvy software utilizes recently adopted national data standards (BPI 2100 & BPI 2200¹) to allow contractors to choose their energy modeling software, while still giving APS access to robust reporting and data collection. In this new program environment contractors can use tools that are much faster, lower their administrative burden to participate, and have the potential to increase measure conversion with more dynamic and customizable reports. In the short time since deployment, APS has already seen contractor satisfaction increase significantly and contractors have estimated that the time they spend generating reports has decreased by as much as 60 minutes per audit. This is a significant time savings that will drive lower contractor costs and improve program cost effectiveness. Finally, the EnergySavvy software automates a number of administrative functions and increases transparency at all levels of the program. With these new tools, APS has further command over our production pipeline and can be more responsive to market trends. Utilizing the additional data gained in this system, the Company can also better inform our marketing efforts to refine our customer acquisition strategies. This results in the ability to acquire and process more jobs at a much lower administrative cost.

¹ BPI 2100 and BPI 2200 are national standards under the Building Performance Institute, designed to aid in the collection and transfer of information about residential buildings. For more information go to www.bpi.org.

Other Significant Information

In recognition of the ongoing success of the APS EE program portfolio and the APS Home Performance with ENERGY STAR® and ENERGY STAR Homes Programs, APS was selected by the EPA as a 2013 ENERGY STAR® Partner of the Year, Sustained Excellence Award winner. This is the highest award that can be earned by an ENERGY STAR® partner, and is bestowed on partners who show sustained excellence in their commitment to EE and whose organization is a national model of best practices in advancing EE. APS has now earned ENERGY STAR® awards for seven consecutive years.

APS works closely with other utilities in the state to coordinate the delivery of HPwES statewide. In 2013, APS continued to work closely with Salt River Project and Southwest Gas as we coordinate program delivery to optimize delivery across both electric service territories. This coordination allowed us to further ensure market consistency, while enhancing the customer experience through a joint program delivery.

MER Adjusted Gross kW and kWh Savings

| Incentive Type | Number of Units | Total Annual MWh Savings | Est. Measure Life (yrs.) | Total Lifetime MWh | Total Coin. MW Savings |
|---|------------------------|---------------------------------|---------------------------------|---------------------------|-------------------------------|
| Direct Install Low-Flow Showerheads with Shower Start | 4,722 | 507 | 10 | 5,065 | 0.012 |
| Direct Install Low-Flow Faucet Aerators | 11,484 | 111 | 10 | 1,115 | - |
| Direct Install CFLs | 47,220 | 1,153 | 6 | 6,915 | 0.113 |
| HPwES Duct Sealing | 1,928 | 1,942 | 18 | 34,964 | 2.234 |
| HPwES Air Sealing Only | 72 | 80 | 15 | 1,197 | 0.029 |
| HPwES Air Sealing and Attic Insulation | 1,340 | 1,464 | 23 | 33,683 | 0.597 |
| HPwES Shade Screens | 112 | 147 | 10 | 1,467 | 0.069 |
| TOTAL | 66,878 | 5,404 | | 84,406 | 3.05 |

Note: MER savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%. Additional details are available in program workpapers.

In addition to the savings shown above, HPwES conducts a number of market transformation efforts, such as contractor training and customer education activities designed to transform the EE market. This results in spillover which produces additional energy savings and net benefits which are not quantified here.

Benefits and Net Benefits/Performance Incentive Calculation

MER adjusted net benefits and performance incentive are provided in Tables 6 and 8.

Costs Incurred

Costs incurred for this program during this Reporting Period are listed below:

| Program | Incentives | Training & Technical Assistance | Consumer Education | Program Implementation | Program Marketing | Planning & Admin. | Program Total Cost |
|----------------|-------------------|--|---------------------------|-------------------------------|--------------------------|------------------------------|---------------------------|
| HPWES | \$1,946,116 | -\$8,979* | - | \$1,150,919 | \$52,610 | \$102,527 | \$3,243,193 |

Note: Negative reported costs for training and technical assistance was a byproduct on an accounting error that shifted spending from one budget category to another. Total program cost for the Home Performance with Energy Star program is accurate.

| DSM Program | Implementation (Contractor) | Implementation (APS) | Program Implementation |
|--------------------|------------------------------------|-----------------------------|-------------------------------|
| HPWES | \$1,150,919 | \$0 | \$1,150,919 |

6. Residential Conservation Behavior Program

Description

The Residential Conservation Behavior Pilot Program provides participating Residential customers with bi-monthly reports containing information designed to motivate them to change their energy usage behavior to save energy.

To drive conservation behavior, this program direct mails comparative Home Energy Reports to participants that show how the energy usage in that customer's home compares with similar homes. Coupled with the comparison data, customers receive recommendations for specific and targeted actions they can take to save energy.

Derived from best practices in behavioral science research, this program uses the power of normative messaging to successfully engage and motivate conservation actions of targeted individuals. Comparing an individual's energy use to what is "normal" has proven to be an effective mechanism to attract attention and motivate action. Normative messaging on energy use, combined with recommendations on how to improve, is the basis of the concept for the Conservation Behavior program. The program provides a benchmark for customers to achieve and instills a sense of competition to produce sustained conservation behaviors.

Program Goals, Objectives, and Savings Targets

The goal of this Program is to use scientifically proven normative messaging techniques to motivate Program participants to save energy by changing their energy use behavior.

APS's 2013 DSM Implementation Plan estimated that the EE savings from the Behavioral Program could reduce peak demand by approximately 5.0 MW and save 36,500 annual and lifetime MWh.

Levels of Customer Participation

The 2013 program targeted an average of 74,000 Residential (both single and multi-family) customers with a control group of approximately 40,000 additional customers. Customers were able to "opt out" of the program at any time. Three hundred forty (340) participants opted out of the program in 2013.

Evaluation/Monitoring Activities and Research Results

- Maintained and updated program Measure Analysis Spreadsheets and Analytic Database.
- Provided guidance on Residential Behavior components of program design tool to support future implementation plans.
- Completed analysis of hourly interval consumption data to determine coincident demand impacts from program participants.
- Conducted statistical analysis of monthly billing records to verify implementation contractor model savings estimates.
- Continued to review model employed by implementation contractor to assess accuracy and reasonableness of model outputs.
- Researched other behavioral-based program models for enhanced program offerings.

Consumer Education and Outreach

In addition to the direct mailed reports and the portal, Home Energy Report recipients also received a door hangar with the June/July report mailing. The door hangar provided recipients with very specific tips and was designed to drive cooling based energy efficiency behaviors.

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Program Modifications/Terminations

No programs or measures were modified or terminated during this Reporting Period.

Other Significant Information

In addition to conservation behavior savings, one of the key benefits of this program is that it promotes the wide array of APS rebate programs in the tips offered on each report.

MER Adjusted Gross kW and kWh Savings

| Program | Number of Participants | Annual kWh Savings Per Unit | Total Annual MWh Savings | Est. Measure Life (yrs.) | TOTAL Lifetime MWh | Coin. kW Demand Savings Per Unit | TOTAL MW Savings |
|-----------------------|-------------------------------|------------------------------------|---------------------------------|---------------------------------|---------------------------|---|-------------------------|
| Conservation Behavior | 70,837 | 352 | 24,944 | 1 | 24,944 | 0.06 | 4.3 |

Note: MER savings are adjusted for line losses (Energy 7.0%, Demand 11.7%) and a capacity reserve factor of 15%.

Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 6 and 8.

Costs Incurred

Costs incurred for this program during this Reporting Period are listed below:

| DSM Program | Incentives | Training & Technical Assistance | Consumer Education | Program Implementation | Program Marketing | Planning & Admin. | Program Total Cost |
|-----------------------|-------------------|--|---------------------------|-------------------------------|--------------------------|------------------------------|---------------------------|
| Conservation Behavior | \$0 | \$0 | \$0 | \$818,001 | \$0 | \$53,871 | \$871,872 |

| DSM Program | Implementation (Contractor) | Implementation (APS) | Program Implementation |
|-----------------------|------------------------------------|-----------------------------|-------------------------------|
| Conservation Behavior | \$817,635 | \$366 | \$818,001 |

7. Multifamily Energy-Efficiency Program

Description

The Multifamily Energy Efficiency Program ("MEEP") is a program that encourages EE improvements in multifamily complexes within the APS service territory. The MEEP received ACC approval in Commission Decision No. 72060 (January 6, 2012).

MEEP uses a three-track approach to promote EE within the multifamily market segment.

- **Track 1** provides free direct install components to retrofit the Residential dwellings of existing communities. Participating communities will receive enough CFLs, low flow showerheads, and faucet aerators to retrofit every community dwelling. Facility personnel, with implementation contractor field support, will conduct all direct install installations.
- **Track 2** will utilize APS Solutions for Business programs to provide complementary energy assessments of the community commercial facilities. The energy assessment will identify opportunities for additional EE savings and the applicable Solutions for Business incentives that are available.
- **Track 3** targets new construction and major renovation multifamily projects. This track builds from the success of the APS ENERGY STAR® Homes program and encourages energy efficient building principles by paying an incentive to builders on a per unit basis for following a list of EE measures outlined in one of four builder option packages ("BOP").
- Larger incentives are offered for achieving increasingly higher levels of energy efficiency.

Program goals, objectives, and savings targets

The MEEP program objectives are to:

- Reduce peak demand and overall energy consumption in the multifamily housing market segment.
- Promote existing community EE retrofits of both dwelling units and common areas.
- Promote higher efficiency construction standards in the development of new multifamily projects.
- Increase overall awareness about the importance and benefits of EE improvements to the landlord and property ownership community.

The MEEP's 2013 program goal was to enroll 54 total participants. This number includes 8,080 dwelling retrofits and 715 new construction/major renovation dwellings.

The MEEP energy saving targets for 2013 as filed in the 2013 DSM Implementation Plan were 7,600 MWh in annual energy savings, 0.5 MW in capacity savings, and 67,900 MWh in lifetime energy savings.

Levels of Customer Participation

A total of 61 multifamily properties participated in the direct install program in 2013 totaling 9,185 apartment dwellings. All totaled 78,932 CFLs, 11,679 faucet aerators, and 6,801 showerheads were installed in multifamily dwellings.

The New Construction/Major renovation program saw eleven projects participate in 2013. A total of 974 units received rebates in 2013.

Evaluation/Monitoring Activities and Research Results

- Maintained and updated program Measure Analysis Spreadsheets and Analytic Database.
- Provided guidance on MEEP components of program design tool to support future implementation plans.
- Continued review of implementation program tracking database and supporting HERS rating documentation to refine savings assumptions.
- Observed "Success with ENERGY STAR" training seminar for new construction projects.
- Conducted process interviews with property managers to assess program satisfaction, barriers to participation, and potential program improvements for Direct Install participants.
- Developed HERS rater interview guide to understand rating processes, incremental costs, and new building practices employed by program participants to achieve program requirements.

Consumer Education and Outreach

In 2013, MEEP introduced a multifamily builder training called Success with ENERGY STAR for Multifamily Buildings. Much like the Success with ENERGY STAR builder trainings used in the Residential New Construction program, this course was tailored for the multifamily sector and taught builders the building science principles needed to build a building that will meet the requirements of the MEEP new construction program.

Problems encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Program Modifications/Terminations

No programs or measures were modified or terminated during this Reporting Period.

MEEP New Construction Optional Measures Installed

In Commission Decision 73089, APS was directed to report the number and type of optional measures that builders/developers are choosing to install, energy savings, coincident demand savings, and actual cost for each optional measure selected by Multifamily New Construction participants.

Eleven Multifamily projects received rebates in 2013. All but two projects were rebated through the performance path. The performance path allows builders or developers of Multifamily new construction projects to use any building design to reach program compliance as long as the building's performance, when tested by a certified HERS rater, meets the minimum performance HERS scores standards established for each BOP. Thus performance path projects don't select optional items from the prescriptive list. Two projects elected to use the prescriptive path. The optional measures chosen and other required information are included in the table below. Note that because builders are unwilling to share construction cost data, actual costs for the optional measures isn't available. However APS has included the incremental costs in the table below for each optional item which is calculated using industry cost data.

| Projects | HVAC Equipment | Lighting and/or Windows | Lighting, Windows and/or Fan Motor | Ductwork | Savings per Measure | Demand per Measure | Incremental Cost |
|-------------------|----------------|-------------------------|------------------------------------|----------|---------------------|--------------------|------------------|
| Highland Lofts | ✓ | ✓ | ✓ | | 1,306 | 0.39 | \$395.95 |
| Washington Pointe | ✓ | ✓ | | ✓ | 1,318 | 0.39 | \$395.95 |

Gross kW and kWh Savings

| Measure | Number of Units | Total Annual MWH Savings | Total Lifetime MWh | Total Demand MW Savings |
|--------------------|-----------------|--------------------------|--------------------|-------------------------|
| SHOWERHEADS | 6,801 | 2,796 | 27,964 | 0.07 |
| AERATORS | 11,679 | 609 | 6,086 | 0.03 |
| CFLS | 78,932 | 3,798 | 22,790 | 0.37 |
| BOP 1 | 26 | 44 | 881 | 0.01 |
| BOP 2 | 269 | 535 | 10,698 | 0.11 |
| BOP 3 | 679 | 1,705 | 34,100 | 0.35 |
| Totals | 98,386 | 9,487 | 102,519 | .93 |

Note: The final savings are adjusted for line losses (energy 7.8%, demand 11.7%) and a capacity reserve factor of 15%.

Other Significant Information

MEEP marketing and consumer education efforts for this Reporting Period include:

- Distribution of a MEEP and MEEP New Construction brochures to customers.
- Direct Call outreach was utilized to get program messaging out in the market place and to secure many of the program's participants.
- Maintained a presence on aps.com to give customers a point of reference for all program information.
- Provided customer educational leave behind materials promoting EE in all dwellings that were retrofitted.
- MEEP presentations at community events.

Costs Incurred

Costs incurred for this program during this Reporting Period are listed below:

| Rebates & Incentives | Training & Technical Assistance | Consumer Education | Program Implement | Program Marketing | Planning & Admin | Program Total Cost |
|---------------------------------|--|---------------------------|--------------------------|--------------------------|-----------------------------|---------------------------|
| \$708,137 | \$2,800 | \$0 | \$496,908 | \$1,576 | \$85,902 | \$1,295,323 |

| DSM Program | Implementation (Contractor) | Implementation (APS) | Program Implementation |
|-------------------------------|------------------------------------|-----------------------------|-------------------------------|
| Multifamily EE Program | \$454,272 | \$42,636 | \$496,908 |

Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 6 and 8.

8. Shade Tree Program

Description

The Shade Tree program provides free shade trees to APS's residential customers that have attended an APS Shade Tree workshop or participated in an online training. The program educates customers on successful tree planting and care techniques, and provides a customer specific site map indicating the ideal tree planting location(s) to help reduce customer cooling needs. Customers can qualify to receive between two (homes built after 1980) and three (homes built prior to 1980) free shade trees per residence. This program is available to residential customers in Maricopa County.

Program Eligibility Requirements:

- Must be a current APS residential customer living in Maricopa County.
- Must be able to plant the trees no more than 15 feet away from the western, eastern or southern side of their home.
- Must have the legal right to plant the trees on the property.
- Must have the ability to care for the trees as needed.
- Must attend an APS Shade Tree workshop or receive equivalent training online.

Program Goals, Objectives, and Savings Targets

The goal of this program is to encourage customers, through education and incentives, to plant shade trees in areas near their homes to reduce home cooling needs.

The program goal was to distribute 7,500 trees in 2013. At this tree distribution goal APS estimated this program could save 700 MWh in annual energy savings, reduce peak demand by approximately 0.4MW and save 20,500 MWh over the expected tree lives.

Level of Customer Participation

A total of 4,174 trees were distributed in 2013 to Maricopa County residential customers. A total of 2,084 were distributed using in-person workshops and 2,090 were distributed using the online program. A total of 9 shade tree educational workshops were held throughout the year (4 in the spring and 5 in the fall) where a total of 2,597 participants were educated.

Evaluation/Monitoring Activities and Research Results

- Maintained and updated program Measure Analysis Spreadsheets and Analytic Database.
- Provided guidance to implementation contractor for performing on-site inspections of program participants for continued assessment of planting practices.

Consumer Education and Outreach

The shade tree education and outreach includes workshop curriculum that was vetted with local arborists with the following designations:

- International Society of Arboriculture ("ISA") Certified Arborist
- ISA Certified Arborist/Utility Specialist ISA Certified Arborist/Municipal Specialist

Each participant receives the following materials in an educational workshop packet:

- Aerial photo of his/her home with the ideal EE planting locations highlighted
- Program participation form
- Workshop evaluation form
- Blue Stake Guide
- Right Tree, Right Place brochure
- Detailed watering guide published by the Arizona Municipal Water Users Association

In addition to the materials listed above, additional resources including a copy of the curriculum, tree information and helpful links are provided on aps.com.

Marketing Materials

- Created instructional video for aps.com and the online training module
- Created a narrated PowerPoint lecture video using the in person workshop curriculum with the narration script vetted by the same organizations listed above.

Advertising

- Flyer distributed at local events and communities
- aps.com/trees
- aps.com banner ads on main aps.com page
- Direct email campaigns targeting customers by zip code
- Facebook ads targeted geographically
- Call Center referrals
- Page one bill message for metro Phoenix zip codes
- Contractor messaging to their member groups
- Local area sustainability program newsletter publications

Problems Encountered and Proposed Solutions

During this Reporting Period the Shade Tree program had a benefit cost ratio of less than 1.0, using the current methodology for calculating the present value of benefits and costs to determine benefit-cost ratios, as ordered in Commission Decision No. 73089. Despite this, APS believes the program should be continued at this time. During 2013, APS modified the delivery of the program to incorporate an on-line tree planting workshop option in addition to the on-site workshops. It took longer than expected to start the on-line workshops, so they were not available for the key spring planting season. APS believes that the on-line workshops will increase customer participation in 2014 while reducing program delivery costs – making the program significantly more cost effective.

In 2013, the program's tree distribution volume wasn't sufficient to offset the program delivery costs the program incurred over the year. APS estimates the program will be cost effective in 2014 by increasing the volume of trees to be distributed to 6,500 and moving more of the program delivery to the online model. In 2013, the program using community workshops only distributed 1,056 trees in the spring. The online workshop became available in August and was well received by customers. Using the online workshop in conjunction with the community workshops together, the number of trees distributed in the fall jumped to 3,118. By increasing the use of the online model, APS can reduce the number of community workshops offered cutting program implementation costs so more incentive dollars are available to distribute more trees while holding program budgets constant.

To increase participation APS plans to initiate new marketing campaigns designed to target new customer segments. Promotional campaigns will target homeowner associations and the new homes markets within the Phoenix Metro area to boost participation levels.

APS estimates the program will be cost effective in 2014 by increasing the volume of trees distributed.

APS understands that a review of program cost effectiveness will be the subject of discussions with the Commission.

Program Modifications/Terminations

Utilization of an online delivery model for the program increased in 2013 and was used to distribute over half of the trees provided to customers. A total of 1,208 customers participated online and 2,090 trees were distributed. Trees were distributed at five fall shade tree workshops.

MER Adjusted Gross kW and kWh Savings

| DSM Program | Number of Units | Annual kWh Savings Per Unit | TOTAL Annual MWh Savings | Est. Measure Life (yrs.) | TOTAL Lifetime MWh | Coin. kW Demand Savings Per Unit | TOTAL MW Savings |
|--------------------|------------------------|------------------------------------|---------------------------------|---------------------------------|---------------------------|---|-------------------------|
| Shade Trees | 4,174 | 83 | 351 | 30 | 10,516 | 0.0339 | 0.14 |

Note: MER savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%.

Costs Incurred

Costs incurred for this program during this Reporting Period are listed below:

| DSM Program | Incentives | Training & Technical Assistance | Consumer Education | Program Implementation | Program Marketing | Planning & Admin. | Program Total Cost |
|--------------------|-------------------|--|---------------------------|-------------------------------|--------------------------|------------------------------|---------------------------|
| Shade Trees | \$21,320 | \$0 | \$1,587 | \$131,009 | \$1,519 | \$13,169 | \$168,604 |

| DSM Program | Implementation (Contractor) | Implementation (APS) | Program Implementation |
|--------------------|------------------------------------|-----------------------------|-------------------------------|
| Shade Trees | \$125,744 | \$5,265 | \$131,009 |

Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 6 and 8.

9. Energy Wise Low Income Weatherization

Description

APS's Energy Wise Low Income Assistance Program is designed to improve the EE, safety and health attributes of homes for customers whose income falls within the defined federal poverty guidelines. This program serves low income customers with various home improvements including cooling system repair and replacement, insulation, sunscreens, water heaters, window repairs and improvements as well as other general repairs. Per Commission Decision No. 68647, the program is conducted in accordance with the rules of the federal Weatherization Assistance Program ("WAP"). WAP incorporates a performance-based energy audit procedure that focuses on optimizing investment in energy efficiency through a systems approach. Participating agencies utilize a Department of Energy site specific REM Design energy audit procedure that ensures that the overall Savings to Investment Ratio ("SIR") for the entire package of materials/measures including the cost of incidental repairs is greater or equal to one. In addition, low income families are provided crisis bill assistance. The program is administered by various community action agencies throughout APS's service territory.

Program Goals, Objectives, and Savings Targets

- To improve the EE of homes for customers whose income falls within the defined poverty guidelines.
- To provide customers information on energy management and conservation.
- To provide assistance in paying the electric bill for qualified customers in crisis situations.

The goals for the APS Energy Wise Low Income Weatherization program specified in APS's 2013 DSM Implementation Plan estimates that the EE savings expected to result from the Low Income Program could reduce peak demand by about 0.2 MW, 1,700 annual MWh and 30,600 MWh over the life of the measures expected to be installed.

Levels of Customer Participation

A total of 799 households received assistance during the Reporting Period. A single household may have received more than one type of assistance.

| Type of Assistance | Number of Households |
|---------------------------|-----------------------------|
| Bill Assistance | 184 |
| Health and Safety | 0 |
| Repair and Replace | 0 |
| Weatherization | 615 |
| Total | 799 |

Evaluation/Monitoring Activities and Research Results

Weatherization measures must pass the cost effectiveness test that is detailed in the federal government's WAP rules. These rules allow certain prescriptive measures, which vary with the climate zone and type of housing construction. Measures not on the prescriptive list must be assessed by a computer analysis to determine the economic feasibility.

The Arizona Governor's Office of Energy Policy ("GOEP"), with information from APS, is analyzing the electric energy used in weatherized homes before and after the weatherization measures are implemented. It takes a year of data before the weatherization and another year of data after the weatherization to get an accurate gauge of the impact of the measures. As the data base grows over time, a more accurate picture of the impact of the weatherization activities will emerge.

Information from the GOEP report for fiscal year 2013, submitted January 2014 is provided below:

Utility Bill Analysis

This report includes an analysis of 208 homes utilizing APS, TEP, Unisource Gas and Electric, and Southwest Gas utility data. This analysis is ongoing, new data will be updated to these values on a quarterly basis.

Provided are Savings to Investment Ratios for total investment from all funding spent (diagnostics, energy measures and health and safety measures) and for energy related measure only (diagnostics and energy measures).

Assumptions

Present value is based on 17.5 years measure life, discount rate of 3% and a utility cost escalation rate of 3%.

Results Summary

The combined SIR of all jobs reviewed to date for funds (Low Income Home Energy Assistance Program, Department of Energy ("DOE"), Utilities, Community Development Block Grant, Utility Repair, Replace and Deposit, Sustainability Energy Resources for Consumers) spent on diagnostics, energy measures, and health and safety measures was 1.04. The combined SIR of all jobs reviewed to date for funds spent on energy measures and diagnostics was 1.26.

The average savings per home reviewed was 2,265 kWh.

It should be noted that, GOEP study savings are based on an average of all homes located throughout the state that participated in the study. APS is currently working with the GOEP to get specific information on average kWh and natural gas therm savings for participating homes within APS's service territory.

Consumer Education and Outreach

Program marketing efforts and outreach included:

- Weatherization outreach and field visits to participating CAP offices
- Weatherization Program Interview at Foundation for Senior Living Training Facility, May 17, 2013
- Booth at 9th Annual Resource Roundup, Community Action Human Resources Agency, Casa Grande, AZ, June 7th, 2013
- Presentation to Navajo Nation Weatherization Department, Tuba City, July 22, 2013

- Presentation to Maricopa County Community Services Commission, Phoenix, April 22, 2013
- Presentation to Hopi Community Networking- Sipaulovi, November 21, 2013
- Presentation to Coconino County Board of Supervisors, Flagstaff, September 3, 2013
National Weatherization Day Celebration, Buckeye, October 30, 2013

Problems Encountered and Proposed Solutions

Implementing weatherization on the Navajo Nation has been challenging due to a variety of factors. The 2013 contract was not delivered until November which resulted in lost time and the invoicing for the work that was started did not meet the terms of the contract. While there are provisions to reallocate funds, we have been actively meeting with representatives from the Navajo Nation Weatherization office in the hope that a solution can be found going forward. However, if there are still issues meeting the program requirements, APS may explore other options for meeting the needs in the area.

Program Modifications/Terminations

No programs or measures were modified or terminated during this Reporting Period.

MER Adjusted Gross kW and kWh Savings

Of the 799 households participating in the program, a total of 615 homes received weatherization services that contributed to the energy savings.

| Program | Number of Homes | Annual kW Savings | Annual kWh Savings | Lifetime kWh Savings |
|---------------------------|------------------------|--------------------------|---------------------------|-----------------------------|
| Low-Income Weatherization | 615 | 206 | 1,490,483 | 26,083,457 |

Note: MER savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%.

The kW factor used to calculate the savings are based on data from the Arizona Energy Office study of 208 weatherized homes. The annual energy demand savings per home in this study are estimated to be 0.3 kW. A 17.5 years measure life and kWh savings factor of 2,265 kWh per home, from the current GOEP report, has been utilized to determine the appropriate kWh savings.

Benefits and Net Benefits/Performance Incentive Calculation

The net benefits for this program are provided in Tables 6 and 8.

Costs Incurred

Costs incurred for this program during the current Reporting Period are listed below:

| Activity | Incentives | Training & Technical Assistance | Consumer Education | Program Implementation | Program Marketing | Planning & Admin | Program Total Cost |
|--|--------------------|--|---------------------------|-------------------------------|--------------------------|-----------------------------|---------------------------|
| Bill Assistance | \$74,385 | - | - | - | \$10,654 | \$55,256 | \$140,294 |
| Health & Safety | - | - | - | - | - | - | \$0 |
| Repair and Replace | - | - | - | - | - | - | \$0 |
| Weatherization | \$2,093,165 | \$10,000 | - | - | \$17,826 | \$70,771 | \$2,191,763 |
| 3rd Party Manager - Arizona Community Action Association | - | - | - | \$50,000 | - | - | \$50,000 |
| APS Program Support | - | - | - | - | - | - | \$0 |
| Total | \$2,167,550 | \$10,000 | \$0 | \$50,000 | \$28,480 | \$126,027 | \$2,382,057 |

Note: This table displays all Energy Wise Program costs, including Health and Safety, and Repair and Replace. However, these categories are not included in Table 2.

Commission Decision No. 73089, requires APS to report spending for non-EE measures in the Energy Wise Program. There were no non-EE measures or associated spending in this program during this Reporting Period.

V. Non-Residential Programs

10. Large Existing Facilities

Description

The Large Existing Facilities Program provides prescriptive incentives for owners and operators of large (over 100 kW aggregated peak monthly demand) Non-Residential facilities for EE improvements in technologies such as lighting, HVAC, motors and refrigeration applications. The Direct Install approach is available for facilities which are individually metered with a peak demand of 400 kW and less. For EE applications not covered by the prescriptive incentives, the program offers custom incentives, which are evaluated individually based on energy savings. The program also provides incentives to reduce the cost of an energy study that identifies energy saving opportunities. The program provides educational and promotional pieces designed to assist facility and business owners and operators in making decisions to improve the EE of their facilities.

Program Goals, Objectives and Savings Targets

- Promote and support EE opportunities for existing large Non-Residential customers.
- Promote the installation of high-efficiency technologies including, but not limited to lighting, HVAC equipment, motors, and refrigeration systems.
- Promote market transformation through APS trade allies, customer outreach and technical training classes.

Levels of Customer Participation

The Large Existing Facilities Program has been the strongest performing Non-Residential program since its inception. During this Reporting Period, APS paid \$11,005,083 in Large Existing program incentives. This represents a total of 1,169 active applications from 529 unique customers and includes projects implemented through Direct Install. Payments to School Districts and charter schools comprised 47 of the 1,169 applications.

| Incentive Status by Fund for Active Applications | Incentives Paid |
|---|------------------------|
| Large Existing – Prescriptive & Custom | \$10,821,594 |
| Large Existing – Studies | \$132,006 |
| Large Existing – Retro commissioning Studies | \$52,150 |
| EIS | (\$666) |
| Total Large Existing Funds | \$11,005,083 |

In Commission Decision No. 70637, APS was required to track DSM applications resulting from studies for which incentives have been paid, and to report results to the Commission. During this Reporting Period, APS paid incentives for 48 study applications from 12 customers including 18 feasibility studies 25 benchmarking studies, and 5 retro commissioning studies. Twenty-three (23) of the 48 studies have already resulted in implementation of the associated measures. Since the program's inception, 331 studies have been completed. Of those 331 studies, 160 have resulted in EE project applications to date.

In Commission Decision No. 73089, required APS to report the type of measures installed by customers after a study was completed. The following measures were installed for studies completed in 2013: lighting, HVAC, and motors.

Evaluation/Monitoring Activities and Research Results

- Conducted ongoing review and analysis of implementation contractor participation databases.
- Maintained and reviewed Non-Residential Measure Analysis Spreadsheets and Analytic Database.
- Completed on-site metering of Hotels, School, and Office lighting projects to support estimates of operation hours, coincidence factors, diversity factors, and installation rates.
- Launched a field metering study of program participants receiving rebates for Variable Frequency Drives to refine savings and performance variable assumptions.
- Developed a tool for calculating savings from implementation of various control strategies for Energy Management Systems.
- Conducted in-depth interviews with Solutions for Business contractors to assess program satisfactions, barriers to participation, potential program improvements, and to understand differences with SRP Business Program. Lighting contractors were interviewed to refine baseline estimates for premium T8 linear fluorescent rebates.

Consumer Education and Outreach

The focal point of program development activities is centered on specific market segments. The program developed technical resources, information, trainings and advertisements to engage and educate these specific segments.

The program continued to develop and foster relationships with industry and stakeholder associations to enhance outreach efforts and connections with members. During the 2013 Reporting Period, these activities included participation in the following:

- March 20 – USGBC Annual Conference attendee (100+ attendees)
- March 30 – AIA Reincarnation Tour, participant (60 attendees)
- April 12 – Arizona Forward Livability Summit, table (100+ attendees)
- July 17/19 – Arizona Association of School Business Officers Annual Conference, booth (1000 attendees)
- August 28 – Arizona League of Cities and Towns, booth (200+ attendees)
- October 1/3 – Governor’s Economic Development Conference, booth (200+ attendees)
- November 2 – American Institute of Architects Annual Awards Program, judge/presenter (200 attendees)

Customer Awareness and Advertising

In 2013, The APS Solutions for Business program was recognized by the American Council for an Energy-Efficient Economy (“ACEEE”) as an Exemplary Commercial and Industrial Comprehensive Program. In addition, the APS Solutions for Business program partnership with Energize Phoenix was recognized as an Honorable Mention Community-based Program.

Marketing efforts for 2013 utilized a variety of channels to maximize reach and effectiveness. Some of the tools used included electronic communications, promotion of

trainings and events, industry award recognition, print material and updates to the program website. These efforts promoted the Solutions for Business program and the benefits of energy efficiency.

- Ad artwork was produced for AZRE Magazine congratulating nominees of the annual RED (Real Estate Development) awards.
- Created trade ally newsletter to promote the program and encourage contractors to participate. The newsletter was distributed via email and posted on the trade ally portal for February.
- Developed and distributed trade ally bulletins informing contractors of program news and updates throughout the year.
- Prepared program folders for APS Economic Development group in January.
- Developed and executed a marketing campaign for a lighting incentive sale that launched in spring. The campaign included updating the trade ally portal with sale details, developing print material, and creating and distributing email communications.
- Sent email for 30-day challenge contest and its extension, as well as T12 incentive extension in fall. The T12 incentive campaign also included a postcard-size flyer.
- Redesigned and produced technology and segment fact sheets to educate participants on the benefits of energy efficiency in specific industries.
- Updated and printed existing print collateral for program and outreach use when promoting the program.
- Launched analysis of customer participation data to make recommendations for thank you letter and print advertisement in fall. This project included creating a customer thank you letter and producing segment-specific thank you advertisements.
- Large checks were produced and printed for presentations to recognize participation and help raise awareness of the program at customer events in 2013 including Crane Elementary and Scottsdale Healthcare.
- Distributed the annual Arizona Highways calendars in fall of 2013. Updated the trade ally portal with program news, collateral, applications, trainings and links to the new APS website as needed throughout the year.

Technical Training

Training courses help customers and trade allies understand technologies and potential for energy savings. This understanding promotes quicker adoption of energy efficiency technologies and encourages customers to undertake more in-depth and holistic projects. Classes allow interaction among customers, topic experts and contractors who can perform work, thus facilitating the contracting process. Feedback from this educational series indicates that customers are more likely to adopt alternative technology following such presentations and the knowledge gained from them.

APS continued to work closely with the Arizona Chapter of the Association of Energy Engineers ("AEE-AZ") to promote and manage registration of the APS Technical Training series. AEE-AZ provided access to their membership to promote the trainings and the Solutions for Business program and also provided APS with turnkey registration support for the training classes that occurred during this Reporting Period. Attendance remained strong during this Reporting Period with many repeat attendees.

The classes held during this Reporting Period attracted 422 attendees:

- February 27,28, March 1–Energy Simulation 101 and 201 (62 attendees)
- March 20 – Energy Information Systems (24 attendees)
- June 25th - Retro Commissioning (31 attendees)
- August 21st - Energy Codes- (60 attendees)
- August 28th Wastewater Benchmarking - (22 attendees)
- September 26th - Energy Studies- (54 attendees)
- September 27th - BOMA Benchmarking- (20 attendees)
- October 17 - Advance Lighting Controls- (64 attendees)
- November 20 - Energy Management Systems – (49 attendees)
- December 11th - Refrigerant class (36 attendees)

The program sponsored the following training organizations and related classes:

- Building Owners & Managers Association – Benchmarking with ENERGY STAR®
- AEE – Certified Energy Manager series – semester long class with 41 participants

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Program Modifications/Terminations

During this Reporting Period, EMS and LED measures were added. Commission Decision No. 73089, requires APS to report these measures, annual savings, capacity savings, and measure life to be reported individually. See the table below:

| Measure | Quantity | kWh Savings | kW Savings | Measure Life |
|---|-----------------|--------------------|-------------------|---------------------|
| EMS - DDC Replacing Pneumatic or Manual T-stat | 771,458 sqft | 3,135,641 | - | 13 |
| EMS - DDC Replacing Programmable T-stat or digital system | 5,114,512 sqft | 16,586,646 | - | 13 |
| EMS - Integrated Lighting Control | 1,801,540 sqft | 2,361,836 | - | 10 |
| LED - non-reflector | 24,299 | 5,398,613 | 1,293 | 7 |
| LED - reflector | 29,183 | 5,775,282 | 1,609 | 7 |
| LED - MR16 | 13,338 | 1,954,182 | 551 | 7 |

Commission Decision No. 68488 requested that APS inform Staff when incentives were paid out that exceeded 50% of the incremental cost of the measure. During 2013, APS temporarily raised the rebate amount for one lighting measure which exceeded the 50% cap. This was done to encourage more participation in this measure. The increased rebate amount was available for final applications submitted between March 1, 2013 and August 31, 2013. This temporary incentive increase did not exceed the 75% of incremental cost cap and remained within the guidelines specified in Commission Decision No. 68488.

No programs or measures were modified or terminated during this Reporting Period.

Self-Direction

On January 23, 2009, the Commission issued Decision No. 71444, which approved Self-Direction. In this Reporting Period, one (1) customer participated in Self-Direction. The project included the installation of LEDs in place of HID fixtures for the exterior lighting at a new mine processing facility.

The total cost of this project was \$132,564.00. The incremental cost for the project is based on the difference between the total installed cost of the LED fixtures (\$132,564.00) relative to the baseline case of HID fixtures (\$60,750.00).

- Total Project Cost: \$132,564.00
- Incremental Cost: \$71,814.00
- Energy Savings: 94,096 kWh
- Demand Savings: 20.76 kW
- Carbon Savings (generation-side): 518 tons CO₂
- Water Savings: 263,092 gallons

Direct Install

The Direct Install measures were launched in April 2009. While these measures are targeted to small businesses, program rules allow small facilities (under 400 kW demand) of large customers to participate. K-12 school buildings of any size can also participate in Direct Install measures. In this Reporting Period, 91 Direct Install projects for Large Existing Facilities were paid a total of \$390,762 in incentives. Pursuant to Commission Decision No. 73089, APS has provided a breakdown of required direct install program information within the Small Business section.

Trade Allies

Trade allies are contractors and other industry professionals who deliver EE solutions to customers. The program incorporates a Trade Ally program to ensure an informed and engaged network of service providers work with APS's customers. To be listed as a Solutions for Business Trade Ally, a company must submit an application and attend program training which includes prescriptive application instruction. To remain on the list, the company must participate in the rebate program and attend an annual training.

Outreach is conducted through strategic partnerships with professional associations within the energy and contracting industry as well as trade show and event participation. Throughout the year over 30 events or training classes were conducted with over 1,000 attendees.

Also as a result of the program's focus on trade ally development and recruiting efforts, 28 new trade allies (companies) were approved during this Reporting Period for a total at the end of this Reporting Period of 294 trade allies (companies).

MER Adjusted Gross kW and kWh Savings

The following table reflects the MER adjusted total energy and demand saving achievements in this Reporting Period for the Large Existing Facilities program. Only savings from projects that were completed and incentives paid are counted in this Progress Report.

| kW Savings | Annual kWh Savings | Lifetime kWh Savings |
|-------------------|---------------------------|-----------------------------|
| 26,195 | 184,206,934 | 2,514,141,047 |

Note: MER savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%.

Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 6 and 8.

Costs Incurred During the Reporting Period

Costs incurred for this program during this Reporting Period are listed below:

| DSM Program | Rebates & Incentives | Training & Technical Assistance | Program Implementation | Consumer Education | Program Marketing | Planning & Admin. | Program Total Cost |
|--------------------|---------------------------------|--|-------------------------------|---------------------------|--------------------------|------------------------------|---------------------------|
| Large Existing | \$11,005,083 | \$93,214 | \$2,653,064 | \$4,332 | \$283,845 | \$253,701 | \$14,293,239 |

Note: All implementation expenditures are contractor expenses.

A breakdown of all implementation contractor expenses for this Reporting Period and program are provided below:

| DSM Program | IC- Implementation | IC- Marketing | IC- Education | IC- Technical Services | IC- Total Cost |
|--------------------|---------------------------|----------------------|----------------------|-------------------------------|-----------------------|
| Large Existing | \$2,381,592 | \$274,999 | \$4,332 | \$82,146 | \$2,743,068 |

11. New Construction and Major Renovations

Description

The Non-Residential New Construction and Major Renovations program includes three elements: 1) design assistance and feasibility studies, 2) custom measures, 3) prescriptive measures, and 4) whole building applications (construction & design incentives). Design incentives involve efforts to integrate EE into a customer's design process to influence equipment/systems selection and specification as early in the process as possible. Custom and prescriptive incentives are available for EE improvements in lighting, HVAC, motors and refrigeration applications. Whole building applications are intended to promote integrated design strategies.

Program Goals, Objectives and Savings Targets

- Promote integrated design and integrated analysis of alternative high-efficiency design packages through design assistance in new construction and major renovation applications.
- Assist the customer design team in examining alternative high-efficiency design packages through the provision of the design incentive.
- Promote market transformation through APS trade allies, customer outreach and technical training classes

Levels of Customer Participation

The majority of new construction and major renovation projects under way are choosing the Whole Building application. Many of these new projects are highly energy efficient and will receive significant incentives. In this Reporting Period, APS paid a total of \$1,347,549 in New Construction incentives. This represents 79 applications from 43 unique customers. One of the 79 applications was from a school district.

Incentive status is provided below.

| Incentive Status for Active Applications | Incentives Paid |
|---|------------------------|
| Large New Construction – Prescriptive & Custom | \$1,256,924 |
| Large New Construction – Studies | \$90,625 |
| Total Large New Construction Funds | \$1,347,549 |

Commission Decision No. 70637, required APS to continue tracking DSM customer applications resulting from studies for paid incentives, and report the semi-annual and cumulative results of its program-to-date tracking efforts. During this Reporting Period, 4 design assistance studies were paid a total of \$30,000, and 8 commissioning studies were paid a total of \$60,625. All 12 of these applications have resulted in EE projects to date. Since program inception, 65 studies have been completed. Of those 65 studies, 45 resulted in applications for EE projects.

Commission Decision No. 73089, required APS to report the type of measures installed subsequent to the receipt of study or design assistance incentives. The Whole Building measure was the only measure type that resulted from studies completed in 2013.

APS Solutions for Business launched the Whole Building incentive in January 2010. During this Reporting Period the program received 21 Whole Building Pre-Notification applications and 13 Whole Building projects were paid incentives.

Evaluation and Monitoring Activities and Research Results

- Conducted ongoing review and analysis of implementation contractor participation databases.
- Maintained and reviewed Non-Residential Measure Analysis Spreadsheets and Analytic Database
- Completed on-site metering of Hotels, School, and Office lighting projects to support estimates of operation hours, coincidence factors, diversity factors, and installation rates.
- Launched a field metering study of program participants receiving rebates for Variable Frequency Drives to refine savings and performance variable assumptions.
- Developed a tool for calculating savings from implementation of various control strategies for Energy Management Systems.
- Conducted in-depth interviews with Solutions for Business contractors to assess program satisfactions, barriers to participation, potential program improvements, and to understand differences with SRP Business Program. Lighting contractors interviewed to refine baseline estimates for premium T8 linear fluorescent rebates.

Consumer Education and Outreach

Strategic partnerships continue to play an important role in New Construction outreach. During this Reporting Period, APS continued to sponsor the Energy Award at the annual awards of the AIA. This partnership will help the program attract allies in the architectural sector and promote the Whole Building incentive. Architects can access low cost Continuing Education Units through the APS Technical Training program.

In addition to many of the marketing and outreach activities described for the Large Existing program, outreach activities for the New Construction program focus on educating potential program participants from the following customer segments: owner-occupied buildings, government buildings (schools, county, city, state) and signature projects.

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Program Modifications/Terminations

See Large Existing Facilities Program section for 2013 program or measure modifications.

MER Adjusted Gross kW and kWh Savings

The following table reflects the MER adjusted total energy and demand saving achievements in this Reporting Period for the Large New Construction Program. Only savings from projects that were completed and incentives paid are counted in this Progress Report.

| kW Savings | Annual kWh Savings | Lifetime kWh Savings |
|-------------------|---------------------------|-----------------------------|
| 5,802 | 15,512,572 | 217,902,672 |

MER savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%.

Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 6 and 8.

Costs Incurred

Costs incurred for this program during this Reporting Period are listed below:

| Program | Rebates & Incentives | Training & Technical Assistance | Program Implementation | Consumer Education | Program Marketing | Planning & Admin. | Program Total Cost |
|------------------|---------------------------------|--|-------------------------------|---------------------------|--------------------------|------------------------------|---------------------------|
| New Construction | \$1,347,549 | \$15,187 | \$389,776 | \$722 | \$23,451 | \$54,046 | \$1,830,731 |

Note: All implementation expenditures are contractor expenses.

A breakdown of all implementation contractor expenses for this Reporting Period is provided below:

| Program | IC- Implementation | IC- Marketing | IC- Education | IC- Technical Services | IC- Total Cost |
|------------------|---------------------------|----------------------|----------------------|-------------------------------|-----------------------|
| New Construction | \$389,776 | \$23,450 | \$722 | \$15,187 | \$429,135 |

12. Small Business Program

Description

The Non-Residential Small Business Program provides prescriptive incentives for small Non-Residential customers (≤ 100 kW of aggregated peak monthly demand) for EE improvements in lighting, HVAC, motors and refrigeration applications through a simple and straightforward mechanism for program participation. Small Business customers are also eligible for custom incentives to implement EE measures. The program provides incentives for conducting an energy study that identifies energy saving opportunities. Direct Install measures were introduced to the Small Business market in April 2009.

Program Goals, Objectives and Savings Targets

- Promote and support EE opportunities for small Non-Residential customers.
- Promote the installation of high-efficiency lighting, packaged HVAC equipment, motors and refrigeration systems.
- Provide customers with direct energy saving opportunity identification and implementation services through the Direct Install family of measures.
- Promote cross-training and EE assessment and referral opportunities among lighting and refrigeration contractors.
- Promote market transformation through APS trade allies, customer outreach.

Levels of Customer Participation

In this Reporting Period, APS paid a total of \$1,575,376 in Small Business program incentives, a decrease of 65 percent compared to the same period in 2012. APS paid incentives on 788 applications from 715 unique customers during this Reporting Period. This is an application decrease of 61 percent compared with the number of Small Business program applications processed for the entire 2012 program year.

Of the 788 small business projects paid, 378 were conducted through the Classic prescriptive/custom program and 410 were conducted through Direct Install. None of the 788 applications were from school districts.

While the program offers a pre-notification process to reserve incentive funds, final applications are only processed after the project is completed and all required documentation is submitted and approved.

| Incentive Status for Active Applications | Incentives Paid |
|---|------------------------|
| Small Business – Prescriptive | \$1,573,126 |
| Small Business – Studies | \$2,250 |
| Small Business – Retro commissioning Studies | \$0 |
| Total Small Business Funds | \$1,575,376 |

Commission Decision No. 70637, required APS to continue tracking DSM customer applications resulting from studies for paid incentives, and report the semi-annual and cumulative results of its program-to-date tracking efforts. There was one study incentive paid in the Small Business program during this Reporting Period, which has not yet resulted

in a DSM application. Seven studies have been completed since program inception, of which five study applications have resulted in EE projects.

Evaluation and Monitoring Activities and Results

- Conducted ongoing review and analysis of implementation contractor participation databases.
- Maintained and reviewed Non-Residential Measure Analysis Spreadsheets and Analytic Database.
- Provided guidance on Small Business components of program design tool to support future implementation plans.
- Completed on-site metering of Direct Install/Express Solutions lighting projects to support estimates of operation hours, coincidence factors, diversity factors, fixture wattages and installation rates.
- Conducted in-depth interviews with Express Solutions contractors to assess program satisfactions, barriers to participation, potential program improvements, and to understand differences with SRP Business Program. Lighting contractors interviewed to refine baseline estimates for premium T8 linear fluorescent rebates.
- There is nothing to report regarding research projects during this period.

Direct Install

Pursuant to Commission Decision No. 73089, APS is providing a breakdown of required direct install program information below. Direct Install incentives were paid on 410 projects for Small Business customers during this Reporting Period. While small businesses are the primary target for the Direct Install offering, large customers with facilities of 400 kW or less premise demand qualify for Direct Install measure incentives, and schools of any size can participate. In addition to the 410 projects paid to small businesses, an additional 110 Direct Install projects for Large Businesses and Schools were paid. The breakdown of Direct Install incentives and paid projects is provided in the section below.

Projects implemented through Direct Install during this Reporting Period saved 11,491 MWh annually and 163,698 MWh over the lifetime of the measures.

1. Active Number of Contractors and Contractor Identification: Direct Install contractor participation from approved contractors has remained consistent. During this Reporting Period, 27 approved contractors participated in Direct Install. Contractors participating during the current Reporting Period include the following:

- Accel Electric AZ LLC
- ATS Electric Inc
- Burden Electric LLC
- D & H Electric, Inc.
- DECA Southwest
- Demand Drop
- Double B Electrical Contractor Inc.
- Eco Power LLC
- G and A Services LLC
- Goodman Contracting Inc.
- Green Fuel Technologies
- Inline Electrical Resources
- J & S Electric LLC
- Ker Electric Inc
- LightDay Solar Inc.
- Lone Mountain Electric LLC
- NuWest Technologies Inc
- Proformance Electric Inc
- Red Mountain Lighting & Energy Service
- Redline Electric LLC
- Rob Love Electric Inc
- Stone Kat Development
- SuperMarket Energy Technologies

- Tepcon Construction, Inc.
- The Signery
- US Energy Services Inc
- Wilson Electric Services Corp

Four contractor training meetings were held and attended by 22 companies interested in participating in the Direct Install approach. These training meetings provided an in-depth review of the Direct Install measure software and included a "hands-on" approach that allowed participants to input sample projects into the Direct Install software. Twelve new companies were approved for Direct Install measure participation during the 2013 program year.

2. Number of Direct Install Jobs Completed: A total of 520 Direct Install projects were paid incentives during this Reporting Period.

3. Dollar Value of the Direct Install Incentives Paid to Contractors: During this Reporting Period, \$1,354,017 in Direct Install incentives were paid to contractors. This represents 66% of the total project costs.

4. Dollar Value of the Direct Install Jobs Paid by the Customer: The total cost of the Direct Install projects during this Reporting Period was \$2,049,131. Customers paid \$695,114 toward these Direct Install projects during this Reporting Period.

5. Quantity of Each Direct Install measure for which incentives were paid:

| Direct Install Measure | Quantity |
|---|----------|
| Delamping | 9,342 |
| T8 Lighting | 16,072 |
| Screw-in CFL | 579 |
| Occupancy Sensors | 383 |
| Exit Signs | 574 |
| Refrigerated Case Fan Motors | 880 |
| Anti Sweat Heater Controls | 80 |
| Refrigerated Novelty Case Controls | 90 |
| Refrigerated Case Evaporator Fan Controls | 0 |
| Hard-Wired CFL | 4,643 |
| Occupancy Sensors - Vending Machines | 16 |

6. Number of Instances Where Incentives Were Reduced Because of Eligibility for Incentives Paid by Other Entities: No known occurrences during this Reporting Period.

7. Spending and Savings Numbers Attributable to Direct Install for the Period and Year-to-Date and Program-to-Date:

Reporting Period: Year-to-Date

| kW Savings | Annual kWh Savings | Lifetime kWh Savings |
|-------------------|---------------------------|-----------------------------|
| 2,956 | 11,491,106 | 163,698,002 |

MER Adjusted Program-to-date

| kW Savings | Annual kWh Savings | Lifetime kWh Savings |
|-------------------|---------------------------|-----------------------------|
| 25,194 | 121,647,303 | 1,753,152,686 |

MER savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%

| Direct Install Cost | Rebates & Incentives | Training & Technical Assistance | Consumer Education | Program Implementation | Program Marketing | Planning & Admin | Subtotal |
|------------------------------------|---------------------------------|--|---------------------------|-------------------------------|--------------------------|-----------------------------|-----------------|
| Year-to-Date Jan-Dec 2013 | \$1,354,017 | \$0 | \$0 | \$625,018 | \$0 | \$5,000 | \$1,979,035 |
| Program-to-Date Jan 2005- Dec 2013 | \$14,999,705 | \$262,406 | \$638,997 | \$2,161,609 | \$75,205 | \$75,166 | \$18,208,088 |

8. Descriptions of the Types of Businesses Participating in Direct Install: The "Retail" sector participated in the Direct Install measure at the highest rate of frequency and accounted for 38% of Direct Install projects paid during this Reporting Period.

| Participation in the Direct Install measure included the following business types: | |
|---|-----|
| College/University | 1 |
| Grocery | 29 |
| Hotel/Motel | 1 |
| K-12 School | 19 |
| Medical | 17 |
| Miscellaneous | 38 |
| Office | 92 |
| Process Industrial | 8 |
| Restaurant | 63 |
| Retail | 200 |
| Warehouse | 52 |

9. Estimate of Avoided Marketing or Other Program or Administration Costs: The costs to implement and market the Small Business program prior to implementing the Direct Install measures were higher on a \$/kWh basis. This is because low participation resulted in low kWh savings over which to spread implementation costs. From the program inception through 2008 because Direct Install was not available, implementation and marketing costs for Small Business was \$1.41M (excluding

incentives). Program net annual savings achieved were 5,544,000 kWh. This resulted in non-incentive program costs of \$.25/kWh saved for the Small Business program.

In this Reporting Period, estimated Direct Install implementation and marketing costs decreased to \$0.053/kWh saved, due to increased kWh savings and lower costs of the Direct Install process. The total Small Business program cost savings is estimated to be \$2,788,455 over the 2008 program cost rate. [Reduced program costs = (\$0.25 - \$0.053) x 14,154,596 net annual savings.]

Consumer Education and Outreach

In 2013, specific marketing activities directed toward small- and mid-size customers were completed throughout the year. These activities focused on targeted program education and information and opportunities to utilize Direct Install contractors to reach customers. Express Solutions marketing efforts for 2013 included:

- Participating in APS’ small-business focus group held in February to research and better understand the market and its needs.
- Developing and producing an Express Solutions bill inserts to promote the program and inform customers of the program participation process. This project sent 40,000 bill inserts to small business customers.
- Ordering Express Solutions trifold brochure explaining the benefits of the program and financing options.

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Program Modifications/Terminated

During this reporting period, EMS and LED measures were added. Commission Decision No. 73089 requires APS report the number of these measures installed, the annual energy and capacity savings, and measure life on an individual basis. Please see table below:

| Measure | Quantity | kWh Savings | kW Savings | Measure Life |
|---|-------------|-------------|------------|--------------|
| EMS - DDC Replacing Pneumatic or Manual T-stat | 28,000 sqft | 113,680 | - | 13 |
| EMS - DDC Replacing Programmable T-stat or digital system | 0 | 0 | 0 | 0 |
| EMS - Integrated Lighting Control | 0 | 0 | 0 | 0 |
| LED - non-reflector | 2,968 | 641,119 | 158.00 | 7 |
| LED - reflector | 3,681 | 729,160 | 202.93 | 7 |
| LED - MR16 | 2,002 | 280,436 | 82.71 | 7 |

There were no significant program modifications to the direct install program for the 2013 program year. For small business customers utilizing the classic program, see the Large Existing section for other applicable program modifications.

MER Adjusted Gross kW and kWh Savings

The following table reflects the total energy and demand saving achievements in this Reporting Period for Small Businesses. Only savings from projects that were completed and incentives paid are counted in this Progress Report.

| kW Savings | Annual kWh Savings | Lifetime kWh Savings |
|-------------------|---------------------------|-----------------------------|
| 3,907 | 14,154,597 | 186,029,207 |

Note: MER savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%.

Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 6 and 8.

Costs Incurred

Costs incurred for the Small Business Program during this Reporting Period are listed below:

| DSM Program | Rebates & Incentives | Training & Technical Assistance | Program Implementation | Consumer Education | Program Marketing | Planning & Admin. | Program Total Cost |
|--------------------|---------------------------------|--|-------------------------------|---------------------------|--------------------------|------------------------------|---------------------------|
| Small Business | \$1,535,376 | \$28,409 | \$606,682 | \$1,444 | \$165,896 | \$90,685 | \$2,468,492 |

Note: All implementation expenditures are contractor expenses.

A breakdown of all implementation contractor expenses for this period and program is provided below:

| DSM Program | IC- Implementation | IC- Marketing | IC- Education | IC- Technical Services | IC- Total Cost |
|--------------------|---------------------------|----------------------|----------------------|-------------------------------|-----------------------|
| Small Business | \$600,611 | \$102,470 | \$1,444 | \$28,409 | \$732,935 |

13. Schools Program

Description

The Schools program includes a set-aside budget schools and provides assistance in reducing the energy used in school buildings, including public, private and charter schools ("K-12"). The incentives available for schools include the same DSM measures that are available for all Non-Residential customers, including Direct Install measures for K-12 schools of any size.

Program Goals, Objectives and Savings Targets

- Maximize the energy savings that can be attained with available DSM funds by providing schools incentives to upgrade lighting, HVAC, refrigeration, and any other energy consuming systems.
- Provide educational and training materials to facility managers and trade allies in order to aid schools in other energy conservation projects.
- Promote market transformation through APS trade allies, customer outreach and technical training classes.
- Provide incentives for other cost effective DSM projects by allowing schools to participate in any Non-Residential DSM Program including Direct Install.

Levels of Customer Participation

In this Reporting Period, APS paid incentives for 218 applications from schools, representing 59 unique school districts and charter schools. Schools have had a very high level of participation in the program.

The self-reported size of the school entity (based on the number of students) for approved applications paid in this Reporting Period are:

| Division | Programs | # of Applications | # of Students |
|-----------|--|-------------------|---------------|
| Metro | Prescriptive Measures - Retrofit | 3 | 34,865 |
| Metro | Prescriptive Measures - Retrofit, Custom Measures - Retrofit | 20 | 33,288 |
| Metro | Prescriptive Measures - Retrofit, New Construction - Whole Building Design, Prescriptive Measures - New Construction | 9 | 31,603 |
| Metro | Prescriptive Measures - New Construction, Custom Measures - New Construction | 2 | 23,949 |
| Metro | Custom Measures - Retrofit | 10 | 20,828 |
| Metro | Prescriptive Measures - Retrofit, Prescriptive Measures - New Construction | 3 | 14,731 |
| Non Metro | Technical Assistance & Studies | 1 | 10,000 |
| Non Metro | Prescriptive Measures - Retrofit | 6 | 8,998 |
| Non Metro | Prescriptive Measures - Retrofit | 1 | 8,125 |
| Metro | Prescriptive Measures - Retrofit, Custom Measures - Retrofit | 31 | 7,014 |
| Metro | Prescriptive Measures - New Construction | 2 | 6,825 |

| | | | |
|-----------|--|----|-------|
| Metro | Prescriptive Measures - Retrofit | 1 | 6,195 |
| Metro | Prescriptive Measures - Retrofit, Custom Measures - Retrofit | 6 | 5,658 |
| Non Metro | Custom Measures - Retrofit, Prescriptive Measures - Retrofit | 2 | 5,631 |
| Metro | Prescriptive Measures - Retrofit, Custom Measures - Retrofit | 2 | 5,544 |
| Metro | Prescriptive Measures - Retrofit | 3 | 5,062 |
| Non Metro | Prescriptive Measures - Retrofit, Technical Assistance & Studies, Custom Measures - Retrofit | 18 | 4,299 |
| Metro | Prescriptive Measures - New Construction | 1 | 4,169 |
| Non Metro | Prescriptive Measures - Retrofit | 4 | 3,484 |
| Non Metro | Prescriptive Measures - Retrofit, Custom Measures - Retrofit | 7 | 3,246 |
| Metro | Prescriptive Measures - Retrofit, Custom Measures - Retrofit | 3 | 2,805 |
| Non Metro | Prescriptive Measures - Retrofit, Custom Measures - Retrofit | 11 | 1,996 |
| Metro | Prescriptive Measures - New Construction | 1 | 1,800 |
| Metro | Prescriptive Measures - Retrofit | 2 | 1,700 |
| Non Metro | Prescriptive Measures - Retrofit, Custom Measures - Retrofit | 21 | 1,313 |
| Metro | New Construction - Whole Building Design | 3 | 1,160 |
| Metro | Custom Measures - Retrofit, Prescriptive Measures - Retrofit | 2 | 832 |
| Metro | Express Solutions | 1 | 820 |
| Metro | Express Solutions | 1 | 788 |
| Metro | Custom Measures - Retrofit, Prescriptive Measures - Retrofit | 3 | 781 |
| Metro | Express Solutions | 1 | 750 |
| Metro | Express Solutions | 1 | 733 |
| Metro | Express Solutions | 1 | 673 |
| Non Metro | Express Solutions | 1 | 654 |
| Non Metro | Express Solutions | 1 | 654 |
| Non Metro | Express Solutions | 1 | 641 |
| Non Metro | Express Solutions | 1 | 634 |
| Metro | Prescriptive Measures - Retrofit | 1 | 628 |
| Non Metro | Prescriptive Measures - Retrofit | 3 | 596 |

| | | | |
|-----------|--|---|-----|
| Metro | Prescriptive Measures - Retrofit | 1 | 502 |
| Metro | Prescriptive Measures - New Construction | 1 | 502 |
| Non Metro | Express Solutions | 1 | 487 |
| Metro | Prescriptive Measures - Retrofit | 2 | 480 |
| Non Metro | Express Solutions | 2 | 476 |
| Non Metro | Prescriptive Measures - Retrofit, Custom Measures - Retrofit | 6 | 469 |
| Non Metro | Express Solutions | 1 | 434 |
| Metro | Express Solutions | 1 | 421 |
| Non Metro | Express Solutions | 1 | 414 |
| Metro | Express Solutions | 1 | 344 |
| Metro | Prescriptive Measures - Retrofit | 1 | 250 |
| Non Metro | Express Solutions | 1 | 147 |
| Non Metro | Express Solutions | 1 | 142 |
| Metro | Prescriptive Measures - Retrofit | 1 | 132 |
| Metro | Prescriptive Measures - Retrofit | 1 | 129 |
| Metro | Express Solutions | 1 | 94 |
| Non Metro | Prescriptive Measures - Retrofit | 1 | 94 |
| Non Metro | Custom Measures - Retrofit | 1 | 87 |
| Metro | Prescriptive Measures - Retrofit | 1 | 84 |
| Metro | Prescriptive Measures - Retrofit | 1 | 64 |

When an incentive application is received from a school district and deemed eligible, funding is first allocated from the Schools budget up to a maximum of \$100,000. Any additional funding required to cover the application is then allocated from the appropriate Large Existing, New Construction or Small Business program budget.

APS paid \$2,436,946 in incentives to schools during the Reporting Period, of which \$1,530,093 was paid from the Schools program budget. The remaining \$906,853 was paid to schools from the Large Existing program and New Construction program budgets (see table below).

| Incentive Status by Fund for Active Applications | Incentives Paid |
|---|-----------------|
| Schools Budget – Prescriptive, Custom, and Direct Install | \$1,510,513 |
| Schools Budget – Feasibility, Design | \$19,580 |

| | |
|--|--------------------|
| Assistance | |
| Schools Budget – Retro commissioning Studies | \$0 |
| Total School Funds | \$1,530,093 |

| Schools Funding Summary: | Incentives Paid |
|----------------------------------|------------------------|
| Schools – School Funds | \$1,530,093 |
| Schools – Large Existing Funds | \$852,845 |
| Schools – New Construction Funds | \$54,008 |
| Schools – Small Business Funds | \$0 |
| Total Paid to Schools | \$2,436,946 |

In Commission Decision No. 70637, the Commission ordered APS to continue tracking DSM applications resulting from studies for which incentives have been paid, and report the semi-annual and cumulative results of its program-to-date tracking efforts. Three study incentives were paid from school funds during this Reporting Period; two feasibility studies were paid for a total of \$14,580, and one design assistance study was paid for a total of \$5,000. Two of these three applications have resulted in energy efficiently projects to date. Since program inception, 42 studies have been completed at schools; of those 42 studies, 37 have resulted in EE projects at schools.

In Commission Decision No. 73089, the ACC requested the type of measures installed after a study was completed. The following measures were installed for studies completed in 2013: Whole Building, HVAC, and Motors.

Schools Direct Install

Direct Install incentives were paid on 19 school projects during this Reporting Period. Of the 19 projects, all were paid from the Schools fund. Direct Install activities for this period are described in the Small Business Program report.

Pursuant to Commission Decision No. 73089, APS is providing a breakdown of required direct install program information within the Small Business section.

Evaluation and Monitoring Activities and Research Results

- Conducted ongoing review and analysis of implementation contractor participation database.
- Maintained and reviewed non-residential Measure Analysis Spreadsheets and Analytic Database.
- Completed updates to Schools components of program design tool.
- Completed on-site metering of School lighting projects to support estimates of operation hours, coincidence factors, diversity factors, and installation rates.
- Launched a field metering study of program participants receiving rebates for Variable Frequency Drives to refine savings and performance variable assumptions.

- Developed a tool for calculating savings from implementation of various control strategies for Energy Management Systems.
- Conducted in-depth interviews with Solutions for Business contractors to assess program satisfactions, barriers to participation, potential program improvements, and to understand differences with SRP Business Program. Lighting contractors were interviewed to refine baseline estimates for premium T8 linear fluorescent rebates.

Consumer Education and Outreach

In addition to many of the marketing outreach activities described for the large existing program, marketing activities associated with the Schools program centered on four areas of focus:

Customer awareness and project generation

During this Reporting Period, one hundred thirteen contacts were made including phone calls, e-mails and meetings with districts to identify potential new projects. Staff supported a booth at the Arizona Association of School Board Officials ("AASBO") summer conference in Tucson, making contacts with school officials as well as contractors

Coordination with the Schools Facility Board ("SFB")

Staff attends all SFB meetings to stay abreast of school EE projects, both funding and progress. Emergency repairs approved by SFB include equipment covered by program specifications such as cooling systems. As these are approved, Solutions for Business follows up with the districts.

Coordination with the APS Schools Key Account Manager

Program staff has coordinated with the APS Relationship Managers ("RM") who have schools assigned to them, to maximize the customer's time and value during planned meetings. The partnership with the APS's Schools RMs has facilitated troubleshooting of other related customer issues as well as the cross-selling of other DSM programs.

Attended conference and meetings of the Arizona Association of School Board Officials ("AASBO")

Program staff has attended AASBO bi-monthly meetings where school business and finance professionals meet. Latest news on legislative and financial issues pertaining to schools is disseminated at these meetings and contacts have been made with school business officials.

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Program Modifications/Terminations

During this Reporting Period, EMS and LED measures were added. Commission Decision No. 73089 requires APS report the number of these measures installed, the annual energy and capacity savings, and measure life on an individual basis. Please see table below:

| Measure | Quantity | kWh Savings | kW Savings | Measure Life |
|--|-----------------|--------------------|-------------------|---------------------|
| EMS - DDC Replacing Pneumatic or Manual T-stat | 130,276 sqft | 530,223 | 0 | 13 |

| | | | | |
|---|--------------|-----------|-------|----|
| EMS - DDC Replacing Programmable T-stat or digital system | 562,472 sqft | 1,824,047 | 0 | 13 |
| EMS - Integrated Lighting Control | 0 | 0 | 0 | 10 |
| LED - non-reflector | 23 | 5,237 | 1.22 | 7 |
| LED - reflector | 298 | 61,455 | 16.43 | 7 |
| LED - MR16 | 54 | 8,588 | 2.23 | 7 |

MER Adjusted Gross kW and kWh Savings

The following table reflects the total energy and demand saving achievements for schools projects completed and paid during this Reporting Period.

| | kW Savings | Annual kWh Savings | Lifetime kWh Savings |
|--------------------------------------|-------------------|---------------------------|-----------------------------|
| Schools - School Funds | 4,729 | 13,481,057 | 176,466,774 |
| Schools - Large Existing Funds | 2,611 | 11,255,755 | 159,843,295 |
| Schools - New Construction Funds | 44 | 203,198 | 2,707,903 |
| Schools - Small Business Funds | - | - | - |
| Total Attributable to Schools | 7,384 | 24,940,010 | 339,017,972 |

Note: MER savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%.

Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 6 and 8.

Costs Incurred

Program costs incurred during this Reporting Period are listed below:

| DSM Program | Rebates & Incentives | Training & Technical Assistance | Program Implementation | Consumer Education | Program Marketing | Planning & Admin. | Program Total Cost |
|--------------------|---------------------------------|--|-------------------------------|---------------------------|--------------------------|------------------------------|---------------------------|
| Schools | \$1,530,093 | \$24,775 | \$798,536 | \$722 | \$39,584 | \$59,276 | \$2,452,986 |

Note: All implementation expenditures are contractor expenses.

A breakdown of all implementation contractor expenses for this period and program:

| DSM Program | IC- Implementation | IC- Marketing | IC- Education | IC- Technical Services | IC- Total Cost |
|--------------------|---------------------------|----------------------|----------------------|-------------------------------|-----------------------|
| Schools | \$796,318 | \$39,585 | \$722 | \$24,775 | \$861,400 |

14. Energy Information Services ("EIS") Program

Description

The EIS Program started in November 2006 with an objective to help customers (>100 kW) save energy through better understanding and control of their facilities' electrical usage. EIS is a tool that provides data regarding usage (kWh) and demand (kW). This detailed information allows customers the ability to fine-tune equipment use, operations and produce summaries to document the impact of usage and demand modifications. Participating customers monitor their electric usage through a web-based dashboard that allows them to view historical 15-minute interval usage and demand graphics from the previous day. This information can be used to improve and monitor energy usage patterns, reduce energy use, reduce demands during on-peak periods and better manage overall facility energy operations.

APS is encouraging customers to take advantage of the EIS program by providing a one-time incentive of up to a maximum of \$12,000 per year or 75% of the cost of installing metering and communications equipment necessary to participate in the program.

Program Goals, Objectives and Savings Targets

- Provide monthly energy usage information to participating Non-Residential customers.
- Participants identify strategies to lower energy cost by reducing energy usage and demand.
- Educate EIS program participants about utility rate concepts and how managing or reducing their energy consumption through EE measures and operational practices can reduce their energy expenses.
- Educate participants on how to download billing history information and create spreadsheets to chart and graph their energy use, as well as to identify consumption trends and savings opportunities.
- Educate EIS participants about creating reports for management that justify energy-efficient capital expenses intended to produce operations and maintenance savings.
- Facilitate analysis of what-if scenarios to help facility manager to assess the benefits of capital improvements or operating adjustments to promote energy efficient changes.

Levels of Customer Participation

12 new customers were added to the EIS program in 2013 resulting in the addition of 44 meters. A total of 55 customers comprised of 222 meters are currently enrolled in the EIS program.

Evaluation and Monitoring Activities and Research Results

- Conducted ongoing tracking and review of the EIS program participation data.
- Maintained and updated program Measure Analysis Spreadsheets and Analytic Database.
- There are no findings from Research Projects to report for 2013.

Consumer Education and Outreach

As reported in the Large Existing Program section of this progress report, APS sponsored a training class on Energy Information Systems on March 20th. Twenty-four customers and trade allies attended this class.

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Program Modifications/Terminations

No programs or measures were modified or terminated during this Reporting Period.

MER Adjusted Gross kW and kWh Savings

| Meters | Est. Measure Life Years | kWh Savings per Year | Lifetime kWh Savings | kW Demand Savings |
|---------------|--------------------------------|-----------------------------|-----------------------------|--------------------------|
| 44 | 5 | 24,709 | 123,546 | 1,686 |

Note: MER savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%.

Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 6 and 8.

Costs Incurred

Costs incurred for this program during this Reporting Period are listed below:

| Program | Rebates & Incentives | Training & Technical Assistance | Consumer Education | Program Implement* | Program Marketing | Planning & Admin. | Program Total Cost |
|-----------------------------|---------------------------------|--|---------------------------|---------------------------|--------------------------|------------------------------|---------------------------|
| Energy Information Services | \$45,654 | \$500 | \$0 | \$11,164 | \$0 | \$340 | \$57,658 |

Note: All implementation expenditures are contractor expenses.

A breakdown of all implementation contractor expenses for this period and program is provided below:

| DSM Program | IC- Implementation | IC- Marketing | IC- Education | IC- Technical Services | IC- Total Cost |
|-----------------------------|---------------------------|----------------------|----------------------|-------------------------------|-----------------------|
| Energy Information Services | \$11,164 | \$0 | \$0 | \$500 | \$11,664 |

VI. Demand Response Programs

15. Home Energy Information Pilot

Description

On March 3, 2011, the Commission approved the Company's Home Energy Information ("HEI") Pilot.² APS's HEI Pilot is designed to test available home area network technologies and determine communication devices, DR strategies, and the mix of "smart" home applications that can be most effectively employed in a Residential setting. In addition, the HEI Pilot will assess customer acceptance, value, and frequency of usage of in-home energy displays or other communication devices designed to assist customers in managing their daily energy usage.

The Pilot was previously planned to be conducted over the two summer seasons of 2011 and 2012 allowing the Company time to choose technology vendors, solicit Residential participants, install devices and communications systems, and determine measurement and evaluation techniques. APS was granted an extension of time to implement the HEI Pilot in Commission Decision No. 73089 (April 4, 2012) through 2013 with no additional funding.

In APS's 2013 Implementation Plan,³ APS requested that the HEI Pilot Program be extended for an additional year, through the end of 2014. The extension request includes budget changes and was made to allow for two full successive summers as part of its MER Study process in order to properly evaluate the persistence and validity of the individual technology assessments, as well as the associated customer behavior patterns providing the essential and comprehensive information to develop a future full-scale program. APS filed a status report with the Commission on the HEI Pilot on December 31, 2012.⁴

APS is deploying the following technology assessment programs as part of the HEI Pilot:

- A - Critical Peak Pricing with Customer Control Device
- B- In Home Energy Information Display: Discontinued – see "Program Modifications" below
- C - Direct Load Control
- D - "Smart" Communication Devices
- E - Pre-Pay Energy Service

The data collected and analyzed in the HEI Pilot will allow APS to better design and implement future DR, EE, and smart grid applications.

Program Goals, Objectives and Savings Targets

See information above for the goals and objectives of the Pilot program. Savings targets have not yet been identified in the Pilot. Savings will be evaluated once data from the Pilot is available.

² Decision No. 72214 (March 3, 2011).

³ Docket No. E-01345A-12-0224.

⁴ Docket No E-01345A-10-0075.

Levels of Customer Participation

For the HEI technology assessment programs A, C and D; 278 customers have enrolled in this reporting period. APS anticipates additional customer recruitment to begin in the second quarter of 2014 for the second summer term.

APS continued recruitment in the Pre-Pay Energy Service program during the Reporting Period. APS enrolled approximately 2,000 customers in the Program as of December 31, 2013.

Evaluation/Monitoring Activities and Research Results

APS has selected Navigant Consulting to conduct the HEI Pilot MER evaluation. The companies have identified the Pilot measurement and evaluation parameters and have begun transferring and analyzing data.

Process surveys have also been conducted on the Pre-Pay Energy Service program and the results are being compiled with the entire evaluation for inclusion in the end of Pilot report.

Pursuant to Commission Decision No. 73223, APS is monitoring bill estimation for prepay customers and will provide those results in a future report.

Consumer Education and Outreach

Using the information obtained from the Pre-Pay stakeholders' collaborative workshops, collaborative meetings and customer focus groups conducted in 2011, APS continued recruiting customers into the Pilot program through 2013. Upon enrolling in the Program, customers received a welcome packet that included information about the Program, frequently asked questions, Program parameters and energy saving tips. Participating customers also received energy usage information sent to them at the interval they chose (daily or at their determined low balance threshold).

In the second quarter ("Q2") 2013, APS began recruitment efforts for HEI A, C & D program, recruiting nearly 700 potential participants and completing 278 installations with only one percent attrition. APS was not able to fully fill the participation for program D (smart app) prior to the end of the summer and will complete the recruitment and installation efforts beginning Q2, 2014 to complete full program D enrollment.

Problems Encountered and Proposed Solutions

Due to a longer than expected time period to complete the necessary enhancements for customer-readiness, in APS's 2013 Implementation Plan, APS requested Commission approval of (i) an additional one-year extension for programs A, C and D and (ii) an increased budget for the Pilot.⁵ APS continues to work with its project partners on software development and system integration efforts. Multiple internal and external systems are required to communicate in order to support all Pilot categories and their corresponding technologies. APS remains confident that these programs will indeed provide valuable data regarding: (iii) the peak load reduction and energy reductions made possibly by these technologies, (iv) their cost-effectiveness, and (v) customer satisfaction of customers involved in the program options.

The Pilot has been divided into three distinct phases.

Pre-Pay Phase:

⁵ See APS's 2013 Demand Side Management Implementation Plan Supplement, filed on December 13, 2012.

- Pre-Pay Energy Services

HEI Phase 1 – Broadband Communications

- Critical Peak Pricing with Customer Control Devices
Direct Load Control

HEI Phase 2 – AMI Communications

- Smart App with energy information via AMI

Programs Modifications/Terminations

APS has removed the HEI Pilot program B (In Home Energy Information Displays) during this Reporting Period. The modification was made due to information APS received from other utilities regarding poor cost effectiveness of In-Home Energy Information Displays. No other modifications were made during this Reporting Period. No programs were terminated.

16. Peak Time Rebate - Residential

Description

Peak Time Rebates ("PTR"), is a DR program for APS's Residential customers. PTR is a Pilot program which became effective on January 1, 2010.

The program provides a price signal to incent customers to reduce their usage during events initiated by APS. PTR events will take place during June through September, weekdays between 2 p.m. and 7 p.m. (Monday through Friday), excluding holidays. Customers will be notified of an event by telephone or e-mail by 4:00 p.m. of the day prior to the PTR Event. Events are limited to 80 hours during the season. APS is required to initiate a minimum of six events and a maximum of 18 events.

Customers will receive a 25 cent per kWh discount off of their electricity bill for all of the electricity usage reduced from their baseline usage during an event.

Program Goals, Objectives and Savings Targets

The program is estimated to provide a 2013 load reduction amount of 0.16 MW. The 0.16 MW load reduction will provide 701 MWh of annual savings. Load reduction and savings targets are summarized in Table 8 – DR Program/Initiatives: 2013 Load Reduction and Energy Savings: January – December, 2012.

Levels of Customer Participation

Approximately 245 Residential customers are enrolled in the program.

Evaluation and Monitoring Activities and Results

Seventeen PTR events were called during this Reporting Period, APS is currently evaluating the results but expects an average of 160 kW load reduction per event.

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Program Modifications/Terminated

No programs or measures were modified or terminated during this Reporting Period.

Consumer Education Outreach

A residential email campaign was held from March-April with the intent of getting customers to sign up for the service plan.

17. Time of Use ("TOU") Rates Including Super Peak Pricing ("SPP")

Description

TOU rates are designed 1) to reflect the time variation in the cost of producing electricity, to more accurately match those costs with the service being provided to the customer thereby encouraging efficient use of energy, and 2) to encourage customers to reduce consumption during peak hours or to shift energy usage to off-peak periods.

APS currently offers five Residential TOU rates:

- a. Two "Series 1" rates that have on-peak hours from 9:00 a.m. to 9:00 p.m. and have been offered since 1982. The Series 1 rates were closed to new customers on January 1, 2010,
- b. Two "Series 2" rates that have on-peak hours from 12:00 pm Noon to 7:00 p.m. and have been offered since 2006. These rates offer customers 40% fewer on-peak hours; and
- c. One Super-Peak Pricing TOU rate that went into effect on January 1, 2010. The SPP periods are pre-determined and set forth in the rate schedule. Participating customers will pay higher charges during the "Super-Peak" periods, but will pay lower charges during off-peak periods. The "Super-Peak" period is 3:00 p.m. to 6:00 p.m., Monday thru Friday during June, July, and August (excluding holidays).

Program Goals, Objectives and Savings Targets

The program is estimated to provide a 2013 load reduction amount of 117.2 MW from the Series 1 and 2 rates and 0.77 MW from the super peak rate. The 118 MW total load reduction will provide 516,840 MWh of annual savings from January through December 2013. Load reduction and savings targets are summarized in Table 8 – DR Program/Initiatives.

Levels of Customer Participation

Approximately 554,000 customers are enrolled in the TOU rates of which 929 are super peak customers. As of December 2013, 101 schools were enrolled in the TOU school rates.

Evaluation/Monitoring Activities and Research Results

No evaluation of TOU rates was performed during this Reporting Period.

Consumer Education and Outreach

The TOU market outreach is outlined below:

- Lifestyles Newsletter May and October
- Rate Brochures

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Programs or Measures Modifications/Terminations

No programs or measures were modified or terminated during this Reporting Period.

18. APS Peak Solutions® Program

Description

APS Peak Solutions® is a commercial and industrial demand response ("DR") program for APS's Yuma and Phoenix metro customers utilizing direct load control and manual load reduction.

The program began on June 1, 2010 and is available for the summer months of June through September between 12:00 noon and 8:00 p.m. (Sunday - Saturday) daily. Customers have the option of being notified either ten minutes or two hours prior to the start of a Peak Solutions® event. Events are limited to minimum of one hour and maximum of six hour per day and 80 event-hours during the season. The program is required to have one test at the start of the season between June 1 and July 15 lasting from four to six hours.

Customers are paid an incentive check at the end of the season for their load reduction amount based on \$/kW or \$/ton of air conditioning.

Program Goals, Objectives and Savings Targets

In 2013, a 28 MW load reduction provided 122,640 MWh of annual savings realized from January through December 2013. Load reduction and savings targets are summarized in Table 8 – Demand Response Program/Initiatives.

Levels of Customer Participation

Approximately 1,645 customers are enrolled in the program.

Evaluation/Monitoring Activities and Research Results

During this Reporting Period one Peak Solutions® test was called in June 2013.

Consumer Education and Outreach

Customer program enrollment has been accomplished; outreach is primarily to customers enrolled in the program on the preparation of an event.

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Programs or Measures Modifications/Terminations

No programs or measures were modified or terminated during this Reporting Period.

19. Critical Peak Pricing – General Service and Residential

Description

Critical Peak Pricing ("CPP"), or its marketing name of Peak Event Pricing, is a DR program for both APS's business (or General Service) and Residential customers in the Yuma and Phoenix metro areas utilizing manual load reduction. CPP is a Pilot program which became effective on January 1, 2010.

The program provides a price signal to incent customers to reduce their usage during events initiated by APS. CPP events will take place during June through September, weekdays between 2 p.m. and 7 p.m. (Monday through Friday), excluding holidays. Customers will be notified of an event by telephone or e-mail by 4:00 p.m. of the day prior to the CPP event. Peak Events are limited to 80 hours during the season. APS is required to initiate a minimum of six events and a maximum of 18 events.

Customers receive a kWh discount incentive off of their existing rate for all of the electricity usage during the program months of June through September.

Program Goals, Objectives and Savings Targets

The program is estimated to provide a 2013 load reduction amount of 0.52 MW. The 0.52 MW load reduction will provide 2,278 MWh of annual savings. Load reduction and savings targets are summarized in Table 8 – DR Program/Initiatives: 2013 Load Reduction and Energy Savings: January – December, 2012.

Levels of Customer Participation

Approximately 629 Residential and no business customers are enrolled in the program.

Evaluation/Monitoring Activities and Research Results

Eighteen CPP events were called during this Reporting Period, APS is currently evaluating the results but expects an average of 520 kW load reduction/customer per event.

Consumer Education and Outreach

Customers in the program were emailed energy reduction tips during event periods and were given a satisfaction survey at the end of the season.

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Programs or Measures Modifications/Terminations

No programs or measures were modified or terminated during this Reporting Period.

VII. Financing Programs

Non-Residential Energy Efficiency Financing

On January 26, 2010, the Commission issued Commission Decision No. 71460, which approved the Non-Residential Customer Repayment Financing option. The option was approved for schools, municipalities and small businesses. Commission Decision No. 72088 expanded eligibility for the financing program to include all Non-Residential customers. APS has partnered with National Bank of Arizona ("NBAZ") to offer this financing option. The Financing option was launched in May of 2010. More than half of the program trade allies have participated in financing training. The program developed educational materials for bankers, customers and trade allies to facilitate the process. Non-Residential loans are summarized below:

| Category | Number of Loans | Total Loan Value | Amount in Default |
|-----------------|------------------------|-------------------------|--------------------------|
| Large Existing | 5 | \$111,456 | 0 |
| Small | 0 | \$0 | 0 |
| Schools | 0 | \$0 | 0 |
| Total | 5 | \$111,456 | 0 |

Residential Energy Efficiency Financing

On September 1, 2010, the Commission issued Decision No. 71866, which approved the Residential Energy Efficiency Financing ("REEF") Program. Through this program, APS customers who participate in the Home Performance with ENERGY STAR® can gain access to financing for energy efficient home improvements.

Launched in February 2011, APS partnered with NBAZ to deliver the REEF program throughout the APS territory. During this Reporting Period, APS introduced a promotional rate of 3.99%.

No customers defaulted in 2013 and APS will continue to monitor defaults closely. Residential loans are summarized below:

| Category | Number of Loans | Total Loan Value |
|-------------------------------------|------------------------|-------------------------|
| Loans issued Jan - Dec. 31, 2013 | 44 | \$262,879.80 |
| Jobs in default | 0 | 0 |
| Jobs deemed unrecoverable | 0 | 0 |

VIII. Codes and Standards Support

Description

The Energy Codes and Appliance Standards ("C&S") Initiative encourages energy savings by supporting the adoption of higher building energy codes and appliance standards in jurisdictions throughout the APS service area by working with code officials, building professionals and other market actors to develop strategies for achieving code compliance cost effectively.

C&S can be one of most cost-effective ways of promoting EE. C&S activities may be utilized to deliver low cost energy savings while supporting Arizona building officials, the construction community, customers and stakeholders. APS supports C&S activities with a multifaceted approach that provides unbiased support, information, resources, and expertise to jurisdictions within the APS service area.

- **Residential and Commercial Energy Codes** - Activities are intended to support energy code adoption committees, building officials, the builder community, and interested stakeholders. Targeted activities include providing technical support, research, subject matter expertise, resources, and training. Training classes are customized to meet local jurisdictional needs and is based on the climate zone and code that is currently being adopted.
- **Appliance Standards** - Activities target appliance standards with recently updated energy efficiency requirements and standards where rulemakings have yet to begin. APS quantifies savings created from recently updated standards where APS EE programs have helped create market demand and market readiness in Arizona.

Utility programs are inextricably linked to building codes and appliance standards. Utility EE programs act as a catalyst to ready the market for new technologies or standards that are not currently common practice in the market place. By providing incentives, trade allies training and educating consumers, utility programs help to increase adoption of new energy efficient technologies and practices. Over time these practices become the commonly accepted business practice and the market adopts higher C&S as a result. While this helps to further the goal of energy efficiency, it also has a direct impact on the available market potential from utility programs. This is due to the fact that utility program savings are calculated using current building codes and appliance standards as the "baseline" for comparison.

In general, energy savings for utility program measures are calculated by taking the efficiency differential from the baseline product (typically represented by current building codes and appliance standards) as compared to the high efficiency product being promoted by the utility program. For example the APS Pools program promotes energy efficient variable speed pool pumps. When the program started in 2010, the pump savings were compared to a single speed pump as the baseline efficiency level. Starting in 2012, Arizona enacted a new appliance standard that sets dual speed pumps as the minimum efficiency requirement. As a result, the new 'baseline' for calculating variable speed pump savings is now based on a higher efficiency dual speed pump, since it is now the minimum efficiency level that someone can legally purchase. It also means that APS now counts less EE

program savings from variable speed pumps based on this higher baseline efficiency level, even though customers who are replacing single speed pumps with variable speed will still see the full savings in their bills. Because of this, increases to building codes and appliance standards can make it more difficult to cost effectively meet utility program EE goals without some consideration being given for code and standards changes in the EE rules.

Program Goals, Objectives and Savings Targets

The goal of the APS Codes and Standards Initiative is to promote increased energy efficiency in the APS service territory through advancement of building codes and appliance standards, including increasing code awareness and better code compliance. Savings are quantified through independent MER evaluation. During this reporting period, energy savings are being reported resulting from codes and standards efficiency increases in motors, general service lighting, T-12 lighting, Residential New Construction, Commercial New Construction, and Title 44 requiring dual speed pumps with new and replacement pool pump installations.

Levels of Customer Participation

Participation levels are identified in APS's Codes and Standards Report for 2013 issued by Navigant Consulting. This report will be submitted to the Commission in a subsequent filing.

Evaluation/Monitoring Activities and Research Results

Evaluation, monitoring, and research results are identified in APS's Codes and Standards Report for 2013 issued by Navigant Consulting. This report will be submitted to the Commission in a subsequent filing.

Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

Program Modifications/Terminations

No programs or measures were modified or terminated during this Reporting Period.

Consumer Education & Outreach/Codes Support Activities

See other significant information section for more information on support activities related to specific energy efficiency codes and standards.

Other Significant Information

Motors – Codes & Standards Support

Savings for electric motors are based on standards set in the Energy Independence and Security Act (EISA)⁶ effective in 2010, requiring certain motor types meet NEMA Energy Efficient or NEMA Premium efficiency levels. Energy and demand savings were calculated as the difference between previous EPACT efficiencies and the new EISA requirements, according to the same methodology used by the Department of Energy (DOE)⁷ for their National Impact Analysis of the effects of the standard.

⁶ Energy Independence and Security Act of 2007. Public Law 110-140, 110th Congress.
<http://www.gpo.gov/fdsys/pkg/PLAW-110publ140/html/PLAW-110publ140.htm>

⁷ Elliot, Neal R. "Impact of Proposed Increase to Motor Efficiency Performance Standards, Proposed Federal Motor Tax Incentives and Suggested New Directions Forward." *ACEEE Report Number IE073*, October 2007.

Quantities and market share of motor sales by motor type were based on APS-program participation data, US Census data, and national NEMA sales data disaggregated to APS service territory. The information from the DOE analysis was combined with research on electric motor standard compliance rates nationwide to determine a compliance rate for 2013. In 2013, APS is claiming 1,330 MWh of annual energy savings and .43 MW of demand savings from the federal EISA motors standard.

Research/Market Effects

The Solutions for Business program was introduced in 2006 and has an extensive portfolio of incentives available from APS to address energy efficiency upgrades in the commercial sector. Among this list of incentives is a comprehensive list of electric motor incentives.

Solutions for Business motor incentives have pushed the envelope of motor efficiency for the last seven years. This program's incentives, training, and technical support have moved the market baselines for motors creating market readiness for new motor standards to be adopted.

Technical Assistance

Solutions for Business engineers provide technical support, answer customer questions, and provide technical analysis in support of customer projects. These engineers support new motor installations by communicating value propositions, benefits, and the energy savings potential these technologies can provide. The Solutions for Business program provides customers customized motor evaluations where motor efficiency is analyzed to determine energy savings potential, estimated annual savings and simple paybacks.

Training/Trade Ally Education

The Solutions for Business training series provides education to trade allies working in the commercial sector. Trade Allies have taken classes on lighting, motors, commissioning/retro-commissioning, pumps, and building automation to name a few. Classes on motor and motor efficiency are frequently offered and promoted throughout the APS service territory.

APS efforts have directly contributed to the education of over 400 professionals and the certification of over 100 new CEMs. CEM training includes an intensive training session on motors and motor efficiency as part of this curriculum.

Residential General Service Lighting – Codes & Standards Support

Savings for general service lamps are based on standards set in the Energy Independence and Security Act (EISA)⁸ effective in 2012, requiring lamps to use

⁸ Energy Independence and Security Act of 2007. Public Law 110-140, 110th Congress.
<http://www.gpo.gov/fdsys/pkg/PLAW-110publ140/html/PLAW-110publ140.htm>

approximately 25-30% less energy than standard incandescent bulbs. Energy and demand savings were calculated as the difference between incandescent wattages prior to the standard and the new effective baseline (sourced from EPA analysis⁹) which accounts for the current mix of EISA-compliant and non-compliant bulbs available on the market. Quantities and market share of bulb sales by bulb type were based on APS-program participation data and national NEMA sales data disaggregated to APS service territory. In 2013, APS is claiming 10,865 MWh of annual energy savings and 1.24 MW of demand savings from the federal EISA general service lamp standard.

Research/Market Effects

The APS residential lighting program uses upstream incentives to discount bulbs at the retailer so customers can buy energy efficient lighting options at discounts directly from a participating store's shelf. This program, introduced in 2005, has promoted high efficiency ENERGY STAR lighting options in the market place. In addition to providing in store discounts this program distributes free compact fluorescent bulbs (CFLs) at community events and offers these bulbs to local non-profit organizations to increase the bulbs use and distribution. Last year alone APS distributed 56,319 free CFLs to APS customers.

This program has played a key role in a significant transformation of the lighting market and has expanded accessibility to a wide range of EE lighting products for AZ consumers. Prior to this program it was difficult to find energy efficient lighting – even a good selection of CFL bulbs, at most lighting retailers. Now EE lighting products dominate the lighting shelf with signage and customer educational messaging prominently displayed. The APS program has helped ready the Arizona market enabling a move to compliance with federal lighting standards, allowing consumers access to qualifying products. Consumer education and trade ally training has helped consumers understand benefits and how to shop for high efficiency lighting.

Trade Ally Training and Consumer Education

In store promotional displays educate customers on the benefits and value of high efficiency lighting options. In store associates are trained to answer customer questions and communicate the benefits and value of using high efficiency lighting products.

APS program field teams participate in 165 community events last year distributing free CFLs and consumer educational materials promoting efficient lighting and EE in general. In addition, demonstration devices such as light boxes and hand cranks that show energy use differences between lighting sources, event booth signage and banner ups are used.

⁹ Environmental Protection Agency. *Next Generation Lighting Programs: Opportunities to Advance Efficient Lighting for a Cleaner Environment*. http://www.energystar.gov/ia/partners/manuf_res/downloads/lighting/EPA_Report_on_NGL_Programs_for_508.pdf

In store consumer education materials include in store displays, informational signage, consumer educational collaterals and community educational events.

Commercial Lighting – Codes & Standards Support

Savings for linear fluorescent lamps are based on standards set by the Department of Energy (DOE) effective July 14th 2012, requiring T12 lamps to be replaced by more efficient T8 lamps. Energy and demand savings were calculated as the difference between T12 wattages prior to the standard and the new T8 baseline (sourced from DOE analysis¹⁰). Quantities and market share of lamp sales by lamp type were based on APS-program participation data and national NEMA sales data disaggregated to APS service territory. Further savings adjustments accounted for compliance rates with the standard and the naturally occurring market adoption of T8 lamps. In 2013, APS is claiming 3,643 MWh of annual energy savings and .92 MW of demand savings from the federal linear fluorescent standard.

Research/Market Effects

The APS Solutions for Business program includes an extensive list of lighting incentives. Until 2013 the Solutions for Business program paid lighting incentives for projects that replaced T-12 fluorescent bulbs with higher efficiency options.

Solutions for Business also creates market transformation by encouraging high efficiency lighting installations through incentivizing lighting retrofits and de-lamping projects. The Existing Building program pays incentives for lighting retrofits where high efficiency lighting replaces T-12 lighting.

Solutions for Business lighting offerings have pushed the envelope of lighting efficiency for the last seven year. The program's incentives, training, and technical support have moved the market baselines for lighting creating the market readiness for new lighting standards to be adopted.

Technical Assistance

APS Solutions for Business engineers support new lighting installations by communicating value propositions, benefits, and the energy savings potential these technologies can provide.

¹⁰ Department of Energy. "General Service Fluorescent Lamps Standards and Test Procedures." http://www1.eere.energy.gov/buildings/appliance_standards/product.aspx/productid/70

Training/Trade Ally Education

APS and CEM training includes classes on lighting and lighting controls that are promoted throughout the APS service territory.

In October of 2013, Solutions for Business offered an advanced lighting controls class with over 60 in attendance. In November an Energy Management Systems class was offered with 49 in attendance that also addressed advanced lighting controls.

Residential New Construction – Codes & Standards Support

Savings from residential building codes are based on a combination of proposed International Energy Conservation Code ("IECC") code changes within APS service territory and energy simulation modeling. APS tracked data on new meter installations to estimate the number of single family and multifamily new homes constructed in 2013. To determine unit energy savings per new meter by code vintage, APS used a suite of DOE2 energy models with code-compliant inputs, calibrated to monthly APS billing data with Phoenix weather. The analysis assumed partial compliance in the first year of adoption, with full compliance achieved by the fourth year after adoption. In 2013, APS is claiming 3,055 MWh of annual energy savings and 1.55 MW of demand savings from the jurisdictional IECC residential building codes.

Research/Market Effects

The APS ENERGY STAR homes program promotes high-efficiency construction practices for new homes. It offers incentives to builders that meet the program's EE standards. Participating builders are trained to apply building science principles to assure that high efficiency homes also have superior comfort and performance.

The APS program works directly with over 45 of the top builders in Arizona. The technical assistance and builder education provided by APS has transformed the Arizona new homes market into one of the country's leading markets for above code construction. The market effects created by this program have a far reaching impact on above code EE building practices, making the adoption of new advanced building codes more viable.

Technical Assistance

The New Homes rater network comprises a group of highly trained and skilled professionals that have earned ENERGY STAR's highest Rater Provider designation. Only raters with this designation are permitted to work in the APS New Homes Program. Raters work directly with builders to provide plan reviews, technical assistance, home audits, and building performance testing to ensure homes meet the ENERGY STAR requirements.

Training/Trade Ally Education

In 2013, APS developed two code training curriculums: Success with the 2009 IECC and Success with the 2012 IECC. These trainings teach the requirements of the energy code by illustrating specific building science details to show how the energy code is correctly applied in real building situations. APS sponsored energy code training events includes the following:

- Hosted a One-Day Success with the 2009 IECC training class in Yuma to train building officials, builders and trades on the technical details of building 2009 IECC compliant homes. The training was held in July with an estimated 60 people in attendance. Yuma recently adopted the 2009 IECC and this class helped to support the market's transition to a higher code in an effort to achieve higher rates of code compliance.
- The City of Phoenix as well as many surrounding jurisdictions have or are in the process of adopting the 2012 IECC. In support of these efforts APS hosted a Success with the 2012 IECC training class in downtown Phoenix during December with 16 builders, trades, HERS raters, and code officials in attendance.
- In support of the local building community and the Southwest Builder Show an APS sponsored code trainer teamed up with a local HERS rater to deliver a building science training seminar which was attended by over 35 local homebuilders and subcontractors.
- APS, SRP, and Southwest Gas teamed up to sponsor a full day of building science and code training in July. This training was held at the SRP facilities with the codes community in attendance.

In 2013, APS continued offering the Success with Energy Star training series for builders. This class teaches builders, subcontractors, HVAC, framing, insulation, energy raters and other trades the building science principles required to build an energy efficient home that meets the requirements of ENERGY STAR. Success with ENERGY STAR classes were offered to the building community on the following dates:

| Description | Date | Who Attended | Number | Where |
|--|-------------|---------------------|---------------|--------------|
| Insulation Installation & Estimator Training | 9/25/2013 | Insulators | 14 | Mesa |
| Insulation Installation & Estimator Training | 10/22/2013 | Insulators | 11 | Avondale |
| Insulation Installation & Estimator Training | 10/24/2013 | Insulators | 12 | Queen Creek |
| Builder Training | 6/6/2013 | Builders | 9 | Peoria |
| Builder Training | 8/13/2013 | Builders | 10 | Chandler |
| Builder Training | 8/14/13 | Builders | 11 | Chandler |

Teaching building science and how it relates to the energy codes and the ENERGY STAR standard directly impacts code adoption and compliance in the market place. These trainings teach the builders and building officials what they need to know to transition to and comply with the new energy code. In the case of ENERGY STAR training the building community is learning the building science necessary to exceed the energy code and build a high performing building.

The APS New Homes Program engaged in training initiatives that targeted builder sales agents and realtors. These trainings were intended to help sales agents and realtors communicate and sell the benefits and value that comes with owning a high performing home.

APS was a key supporter of the Arizona Building Officials (AZBO) and sponsored the AZBO spring (Prescott, April) & fall (Scottsdale, October) Training Institutes. These events are well attended and are frequented by the codes community from all over the state. Training curriculums include energy codes, fire & safety, and plan review to name a few.

In September, one of the industry's premier energy efficiency and building science conferences was held in Phoenix. This conference featured a codes track and APS provided one-day conference scholarships for 10 code officials.

In conjunction with the EEBA conference APS also sponsored an Appraisers Summit which featured a roundtable discussion of industry residential appraisers in an

attempt to establish industry protocols for accurately and correctly valuing energy efficiency upgrades in residential new construction. If the market adopts standardized protocols for valuing above code constructed homes the higher construction costs of these homes can be reduced eliminating a key market barrier.

Commercial New Construction – Codes & Standards Support

Savings from commercial building codes are based on a combination of proposed ASHRAE 90.1 code changes within APS service territory and energy simulation modeling. APS tracked data on new meter installations and building type to estimate the number of commercial buildings constructed in 2013. To determine unit energy savings per square foot of new commercial floor space by building type, APS used a suite of DOE ¹¹ commercial prototype building energy models with code-compliant inputs simulated in each of four climate zones within APS territory. The analysis assumed partial compliance in the first year of adoption, with full compliance achieved by the fourth year after adoption. In 2013 APS is claiming 2,146 MWh of annual energy savings and .54 MW of demand savings from the jurisdictional IECC residential building codes.

Research/Market Effects

The APS Solutions for Business Non-Residential New Construction and Major Renovations program includes three components: 1) design assistance and feasibility studies, 2) custom measures, 3) prescriptive measures, and 4) whole building applications (construction & design incentives).

Program incentives are designed to support commercial new construction projects from design through to building commissioning. The program's commissioning Energy Information System incentives also provide support post construction to benchmark and measure the building's post construction performance and energy use.

This stretch code program provides developers the support and training they need to adopt advanced building science principles and new innovative technologies. Program incentives and support make stretch code construction feasible by offsetting some of the additional cost of building efficiently. This program's support has been an influential force in energy code jurisdictions creating the market readiness necessary for these jurisdictions to adopt more stringent energy codes.

Technical Assistance

Solutions for Business engineers support new construction projects by communicating value propositions, benefits, and the energy savings potential these technologies can provide. In addition program engineers provide technical support on commissioning, building design, energy modeling, and feasibility studies.

¹¹ US Department of Energy. "Commercial Prototype Building Models." Building Energy Codes Program. November 1st, 2012. http://www.energycodes.gov/development/commercial/90.1_models

Training/Trade Ally Education

The Solutions for Business trade ally training series has supported the commercial new construction market with classes on new energy efficient technologies, advanced building science principles and understanding commercial energy codes. In 2013, APS offered a one-day training on understanding commercial energy codes.

CEM training also supports the commercial new construction sector with classes on the building envelope, industrial systems, energy economics, HVAC, and lighting to name a few.

In August APS hosted and trained commercial construction professionals on the ASHRAE 90.1 2010 energy code. This training was held in Phoenix and covered all the key elements of the commercial code including in-depth discussions of the electrical and mechanical code requirements. There were more than 50 commercial new construction professionals and trade allies in attendance.

The Solutions for Business program also supported the commercial new construction market with trade ally training in 2013 that covered BOMA Benchmarking, Retro Commissioning, Energy Studies and Energy Simulation.

Pool Pumps – Codes & Standards Support

Arizona Revised Statute (ARS) Title 44¹², effective January 1st, 2012, requires residential pool pumps to be capable of operating at two or more speeds. Energy and demand savings were calculated as the difference between noncompliant single speed pumps and Title 44 compliant dual or variable speed pumps. Quantities and market share of pool pump sales by pump type were based on statewide and national data provided by a leading pool pump manufacturer and disaggregated to APS service territory. The derivation for annual consumption values for the “pre-standard” and “post-standard” pumps was primarily based on field metering studies in APS service territory combined with information derived from manufacturer estimates and secondary research. The 2007-2012 sales data informed estimates of both a compliance rate with the standard and the natural rate of market adoption of efficient pool pumps. In 2013, APS is claiming 1,185 MWh of annual energy savings and .14 MW of demand savings from the ARS Title 44 pool pump standard.

Research/Market Effects

The Energy-Efficient Pool Pump element of the Consumer Products program promotes the installation and optimal calibration of energy-efficient variable-speed pool pump motors. This program’s market presence has transformed the market with the incentives and education needed to inform customers and pool technicians on the value of installing variable speed pool pumps over a single or dual speed model.

Technical Assistance

¹² Chapter 9, Article 19 Section 2 Part B.2.b

Program representatives provide pump calibration services on each rebated pool pump to ensure the pump is programmed and setup to deliver energy savings and efficient operation.

Training/Trade Ally Education

The program offers retailers product and program training to enhance product knowledge, create program awareness, and to arm retailers with the knowledge they need to keep customers informed on program and product features. There are over 200 participating pool pump retailers in the program which represents the majority of the Arizona pools industry. This program’s presence in the market place transforms the pools market by directly impacting retailers and influencing customer decisions to purchase variable speed over single or dual speed pool pumps.

MER Adjusted Gross kW and kWh Savings

| DSM Project | Total Annual Savings (kWh) | Demand (kW) |
|--------------------------|-----------------------------------|--------------------|
| Motors | 1,329,915 | 433.45 |
| General Service Lighting | 10,865,286 | 1,237.10 |
| T-12s | 3,642,951 | 921.35 |
| Res New Construction | 3,055,244 | 1,553.88 |
| Comm New Construction | 2,145,834 | 536.89 |
| Pool Pump Legislation | 1,184,865 | 135.25 |
| Total | 22,224,095 | 4,817.92 |

Note: The final savings are adjusted for line losses (energy 7.0%, demand 11.7%) and a capacity reserve factor of 15%.

Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 6 and 8.

Costs Incurred

Costs incurred for this program during this Reporting Period are listed below:

| | Incentives | Training & Technical Assistance | Consumer Education | Program Implementation | Program Marketing | Planning & Admin. | Program Total Cost |
|---------------------------|-------------------|--|---------------------------|-------------------------------|--------------------------|------------------------------|---------------------------|
| Codes & Standards Support | \$0 | \$0 | \$0 | \$90,830 | \$0 | \$13,441 | \$104,271 |

| DSM Program | Implementation (Contractor) | Implementation (APS) | Program Implementation |
|---------------------------|------------------------------------|-----------------------------|-------------------------------|
| Codes & Standards Support | \$49,983 | \$40,847 | \$90,830 |

Consumer Education and Outreach

CS promotional flyers were distributed to promote the Success with 2009 & 2012 IECC code classes.

IX. Measurement Evaluation and Research

Description

Navigant Consulting provides MER Services for APS's DSM programs. These Measurement and Evaluation activities include, but are not limited to:

- Performing process evaluation research to indicate how well programs are working to achieve their objectives;
- Performing impact evaluation research to verify that energy-efficient measures are installed as expected; measuring savings on installed projects to monitor the actual program savings that are achieved; and conducting research activities to refine savings and cost benefit models and identify additional opportunities for EE;
- Performing and tracking savings measurements to monitor the actual program savings that are achieved; and
- Researching additional opportunities for EE.

The approach for measurement and evaluation of the DSM programs is to integrate data collection and tracking activities directly into the program implementation process.

The MER Verification Report for 2013, prepared by Navigant Consulting, will be provided as a separate filing.

Program Modifications

A Technical Reference Manual detailing savings algorithms, performance variables, and incremental cost assumptions for all measures rebated through APS' DSM programs was developed and filed with the ACC, as required in Commission Decision No. 73183.

X. American Recovery and Reinvestment Act

APS partnered with City of Phoenix on Energize Phoenix. This project is targeted to energy-efficient retrofits with Residential and Non-Residential customers. The City of Phoenix is leveraging the incentives with the APS Home Performance Program and Solutions for Business program. During this Reporting Period, the Energize Phoenix grant expired. For 2013, 194 businesses benefited from the Energize Phoenix program.

CERTIFICATION BY APS OF DSM ANNUAL PROGRESS REPORT FOR THE PERIOD:

JANUARY THROUGH DECEMBER 2013

Pursuant to Decision No. 67744 (April 7, 2005), I certify that to the best of my knowledge and based on the information made available to me, the DSM Annual Progress Report is complete and accurate in all material respects.

27 February, 2014

Date

Tammy McLeod

Tammy McLeod
Vice President and Chief Customer Officer