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AZ CORP COMMISSION  
DOCKET CONTROL

March 1, 2011

Docket Control  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

RE: Demand Side Management Semi-Annual Report  
Decision No. 67744; Docket Nos. E-01345A-03-0437 & E-01345A-05-0526

Pursuant to Decision No. 59601:

“APS shall file detailed semi-annual reports with Staff and in Docket Control on all DSM and renewables activities, although confidential information need not be filed in Docket Control.”

Pursuant to Decision No. 67744:

“APS is required to file mid-year and end-year reports on each DSM program. All DSM year-end reports filed at the Commission by APS must be certified by an Officer of the Company.”

Decision Nos. 68648, 70637, and 71444 also include requirements for specific changes and additions to the DSM Semi-Annual report.

Enclosed, please find the DSM Semi-Annual Report covering the period of July 1, 2010, through December 31, 2010. In this filing, APS is voluntarily responding to the Arizona Administrative Code (“AAC”) Section R14-2-2410(J). The Company is also required to provide its updated Energy Conservation Plan pursuant to the AAC, Section R14-2-213. This DSM Semi-Annual Report also satisfies that requirement and includes consumer education and conservation information.

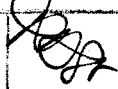
If you have any questions or concerns please contact Jeff Johnson at (602) 250-2661.

Sincerely,

  
Susan Casady

Arizona Corporation Commission  
DOCKETED

MAR 1 2011

DOCKETED BY 

SC/kc  
Attachments

cc: Brian Bozzo  
Terri Ford  
Barbara Keene  
Julie McNeely-Kirwan  
Laura Furrey

**ARIZONA PUBLIC SERVICE COMPANY**

**Demand Side Management  
Semi-Annual Report**

**July through December 2010**

**March 1, 2011**

# ARIZONA PUBLIC SERVICE COMPANY

## DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

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**ARIZONA PUBLIC SERVICE COMPANY**

**DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:  
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## ARIZONA PUBLIC SERVICE COMPANY

### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

#### INTRODUCTION

This Demand Side Management Semi-Annual Progress Report ("Progress Report") includes the following information for all APS Demand Side Management ("DSM") programs that were in place during this Reporting Period, including programs for Residential, Non-Residential and Low Income customers:

- A brief description of the program;
- Program modifications;
- Program goals, objectives, and savings targets;
- Programs terminated;
- Levels of participation;
- A description of evaluation and monitoring activities and results;
- kW and kWh savings;
- Benefits and net benefits, both in dollars, as well as Performance Incentive calculation;
- Problems encountered and proposed solutions;
- Costs incurred during the Reporting Period disaggregated by type of cost, such as administrative costs, rebates, and monitoring costs;
- Findings from all research projects; and
- Other significant information.

Summary pages detailing the program expenses are provided in Tables 1, 2 and 3. Tables 4, 5 and 6 depict DSM program MW and MWh savings. Tables 7, 8 and 9 depict net benefits and performance incentive. Table 10 depicts the environmental benefits associated with the lifetime energy savings resulting from DSM programs.

Items included in this Progress Report as a result of Arizona Corporation Commission ("Commission" or "ACC") Decision Nos. 70637 and 70666 are:

- Year-to-Date ("YTD") and Program-to-Date ("PTD") results are reflected in the tables;
- Gross and net DSM demand and energy savings;
- Savings results are Measurement, Evaluation and Research ("MER") adjusted;
- Estimated environmental benefits;
- Non-Residential study applications for the current Reporting Period and for cumulative results; since being offered in 2006;
- School participation (YTD); and
- Health and safety, and repair and replace results are reported by measure type in the Low Income Program section.

# ARIZONA PUBLIC SERVICE COMPANY

## DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

**TABLE 1**  
**DSM Program Expenses: July 2010 – December 2010**

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation <sup>1</sup>	Program Marketing	Planning & Admin.	Total Program Cost
<b>Residential:</b>							
Consumer Products	\$2,120,370	\$163	\$816	\$1,565,431	\$336,466	\$69,194	\$4,092,440
Existing Homes	\$3,721,911	\$154,997	\$-15,991	\$959,366	\$300,554	\$33,014	\$5,153,851
New Construction	\$444,400	\$88,591	\$5,559	\$145,406	\$114,639	\$43,379	\$841,974
Appliance Recycling	\$141,660	\$0	\$0	\$391,377	\$111,586	\$2,089	\$646,712
Behavioral	\$0	\$0	\$0	\$475,000	\$0	\$0	\$475,000
Multi-Family	\$0	\$0	\$0	\$0	\$0	\$14,053	\$14,053
Low Income	\$1,331,491	\$11,545	\$1,678	\$8,118	\$25,124	\$62,956	\$1,440,912
<b>Totals for Residential</b>	<b>\$7,759,832</b>	<b>\$255,296</b>	<b>\$-7,938</b>	<b>\$3,544,698</b>	<b>\$888,369</b>	<b>\$224,685</b>	<b>\$12,664,942</b>
<b>Non-Residential:</b>							
Lg Existing Facilities	\$5,122,430	\$56,349	\$35,070	\$1,116,283	\$409,019	\$112,981	\$6,852,132
New Construction	\$382,800	\$10,610	\$3,456	\$744,609	\$135,927	\$134,673	\$1,412,075
Small Business	\$816,671	\$7,444	\$1,413	\$223,612	\$60,252	\$23,489	\$1,132,881
Energy Information Svcs	\$1,091	\$11,790	\$0	\$3,404	\$3,646	\$832	\$20,763
Schools <sup>2</sup>	\$1,007,385	\$2,746	\$2,467	\$190,327	\$73,280	\$14,667	\$1,290,872
<b>Total Non-Residential</b>	<b>\$7,330,377</b>	<b>\$88,939</b>	<b>\$42,406</b>	<b>\$2,278,235</b>	<b>\$682,124</b>	<b>\$286,642</b>	<b>\$10,708,723</b>
<b>Segment Totals</b>	<b>\$15,090,209</b>	<b>\$344,235</b>	<b>\$34,468</b>	<b>\$5,822,933</b>	<b>\$1,570,493</b>	<b>\$511,327</b>	<b>\$23,373,665</b>
<b>Program Costs</b>							<b>\$23,373,665</b>
<b>Measurement, Evaluation &amp; Res (MER)</b>							<b>\$1,023,510</b>
<b>Performance Incentive<sup>3</sup></b>							<b>NA*</b>
<b>TOTAL</b>							<b>\$24,397,175</b>

1. Includes costs for Implementation Contractor ("IC") for all programs.
2. Schools are allowed to receive funding from other Non-Residential programs as well. Refer to the subsection on the Schools Program for additional information on total funds allocated to school districts to date.
3. The Performance Incentive is calculated in Tables 8 & 9, and the methodology/calculation was approved by the ACC in Decision No. 69663 and was modified in the 2009 Settlement Agreement, Decision No. 71448.

**\*APS has an Annual MWh savings goal, and therefore, has not estimated the Performance Incentive for this 6 month Reporting Period, but has reported the annual Performance Incentive amount in Tables 2 and 8.**

### **Definitions**

**Rebates & Incentives** – Dollars that go toward customer rebates and incentives, installation of low income weatherization and low income bill assistance.

**Training & Technical Assistance** – Dollars that are used for energy-efficiency training and technical assistance.

**Consumer Education** – Dollars that are used to support general consumer education about energy-efficient improvements.

**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 marketing the program and increasing DSM consumer awareness (direct program marketing costs as opposed to general consumer education).

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

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

**ARIZONA PUBLIC SERVICE COMPANY**

**DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:  
JULY THROUGH DECEMBER 2010**

**Performance Incentive** – Share (%) of DSM net economic benefits (benefits minus cost), capped at a percent of total DSM expenditures, depending on the percent of MWh savings goal achieved.



**ARIZONA PUBLIC SERVICE COMPANY**

**DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:  
JULY THROUGH DECEMBER 2010**

**TABLE 2  
Year-to-Date DSM Program Expenses: January 2010 – December 2010**

<b>DSM Program</b>	<b>Rebates &amp; Incentives</b>	<b>Training &amp; Technical Assistance</b>	<b>Consumer Education</b>	<b>Program Implementation<sup>1</sup></b>	<b>Program Marketing</b>	<b>Planning &amp; Admin.</b>	<b>Total Program Cost</b>
<b>Residential:</b>							
Consumer Products	\$3,729,247	\$626	\$766	\$2,148,653	\$785,190	\$133,735	\$6,798,217
Existing Homes	\$6,979,672	\$234,908	\$158,702	\$1,787,596	\$512,426	\$74,093	\$9,747,397
New Construction	\$760,800	\$116,328	\$6,584	\$285,988	\$259,003	\$94,915	\$1,523,618
Appliance Recycling	\$242,280	\$0	\$0	\$682,223	\$237,714	\$2,773	\$1,164,990
Behavioral	\$0	\$0	\$0	\$475,000	\$0	\$0	\$475,000
Multi-Family	\$0	\$0	\$0	\$0	\$0	\$14,053	\$14,053
Low Income	\$1,710,075	\$13,704	\$2,452	\$66,316	\$27,866	\$126,912	\$1,947,325
<b>Totals for Residential</b>	<b>\$13,422,074</b>	<b>\$365,566</b>	<b>\$168,504</b>	<b>\$5,445,776</b>	<b>\$1,822,199</b>	<b>\$446,481</b>	<b>\$21,670,600</b>
<b>Non-Residential:</b>							
Lg Existing Facilities	\$8,127,917	\$126,316	\$69,224	\$2,175,248	\$783,674	\$285,708	\$11,568,087
New Construction	\$1,874,076	\$36,015	\$4,368	\$1,020,097	\$315,778	\$165,519	\$3,415,853
Small Business	\$1,508,215	\$16,886	\$1,786	\$491,397	\$176,733	\$52,529	\$2,247,546
Energy Information Svcs	\$29,094	\$11,790	\$0	\$8,760	\$5,861	\$2,369	\$57,874
Schools <sup>2</sup>	\$1,908,859	\$5,855	\$3,118	\$298,598	\$204,920	\$42,236	\$2,463,586
<b>Total Non-Residential</b>	<b>\$13,448,161</b>	<b>\$196,862</b>	<b>\$78,496</b>	<b>\$3,994,100</b>	<b>\$1,486,966</b>	<b>\$548,361</b>	<b>\$19,752,946</b>
<b>Segment Totals</b>	<b>\$26,870,235</b>	<b>\$562,428</b>	<b>\$247,000</b>	<b>\$9,439,876</b>	<b>\$3,309,165</b>	<b>\$994,842</b>	<b>\$41,423,546</b>
				<b>Program Costs</b>			<b>\$41,423,546</b>
				<b>Measurement, Evaluation &amp; Res (MER)</b>			<b>\$2,288,490</b>
				<b>Performance Incentive<sup>3</sup></b>			<b>\$6,119,686</b>
				<b>TOTAL</b>			<b>\$49,831,722</b>

1. Includes costs for Implementation Contractor (IC) for all programs.
2. Schools are allowed to receive funding from other Non-Residential programs as well. Refer to the subsection on the Schools Program for additional information on total funds allocated to school districts to date.
3. The Performance Incentive is calculated in Tables 8 & 9, and the methodology/calculation was approved by the ACC in Decision No. 69663 and was modified in the 2009 Settlement Agreement, Decision No. 71448.

**ARIZONA PUBLIC SERVICE COMPANY**

**DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:  
JULY THROUGH DECEMBER 2010**

**TABLE 3  
Program-to-Date DSM Program Expenses: January 2005 – December 2010**

<b>DSM Program</b>	<b>Rebates &amp; Incentives</b>	<b>Training &amp; Technical Assistance</b>	<b>Consumer Education</b>	<b>Program Implementation<sup>1</sup></b>	<b>Program Marketing</b>	<b>Planning &amp; Admin.</b>	<b>Total Program Cost</b>
<b>Residential:</b>							
Consumer Products	\$12,818,606	\$4,564	\$50,917	\$5,580,309	\$2,106,086	\$649,071	\$21,209,553
Existing Homes	\$13,559,515	\$587,038	\$966,042	\$3,742,457	\$1,679,869	\$338,873	\$20,873,794
New Construction	\$3,429,506	\$568,801	\$128,117	\$1,017,997	\$1,770,217	\$472,193	\$7,386,831
Appliance Recycling	\$242,280	\$0	\$0	\$682,224	\$237,714	\$2,773	\$1,164,991
Behavioral	\$0	\$0	\$0	\$475,000	\$0	\$0	\$475,000
Multi-Family	\$0	\$0	\$0	\$0	\$0	\$14,053	\$14,053
Low Income	\$6,451,001	\$73,198	\$21,099	\$568,800	\$48,920	\$583,629	\$7,746,647
<b>Totals for Residential</b>	<b>\$36,500,908</b>	<b>\$1,233,601</b>	<b>\$1,166,175</b>	<b>\$12,066,787</b>	<b>\$5,842,806</b>	<b>\$2,060,592</b>	<b>\$58,870,869</b>
<b>Non-Residential:</b>							
Lg Existing Facilities	\$20,195,365	\$490,953	\$241,231	\$6,875,683	\$2,093,392	\$1,449,039	\$31,345,663
New Construction	\$6,259,144	\$114,132	\$41,058	\$3,685,378	\$939,719	\$602,047	\$11,641,478
Small Business	\$2,026,217	\$35,434	\$22,802	\$1,861,659	\$425,084	\$269,816	\$4,641,012
Building Operator Training	\$0	\$56,897	\$0	\$22,043	\$15,783	\$7,480	\$102,203
Energy Information Svcs	\$78,667	\$17,817	\$583	\$103,242	\$8,574	\$25,576	\$234,459
Schools <sup>2</sup>	\$2,935,217	\$31,357	\$14,291	\$858,674	\$459,214	\$159,200	\$4,457,953
<b>Total Non-Residential</b>	<b>\$31,494,610</b>	<b>\$746,590</b>	<b>\$319,965</b>	<b>\$13,406,679</b>	<b>\$3,941,766</b>	<b>\$2,513,158</b>	<b>\$52,422,768</b>
<b>Segment Totals</b>	<b>\$67,995,518</b>	<b>\$1,980,191</b>	<b>\$1,486,140</b>	<b>\$25,473,466</b>	<b>\$9,784,572</b>	<b>\$4,573,750</b>	<b>\$111,293,637</b>
<b>Program Costs</b>							<b>\$111,293,637</b>
<b>Measurement, Evaluation &amp; Res (MER)</b>							<b>\$6,931,951</b>
<b>Performance Incentive<sup>3</sup></b>							<b>\$14,416,545</b>
<b>TOTAL</b>							<b>\$132,642,134</b>

1. Includes costs for Implementation Contractor (IC) for all programs.
2. Schools are allowed to receive funding from other Non-Residential programs as well. Refer to the subsection on the Schools Program for additional information on total funds allocated to school districts to date.
3. The Performance Incentive is calculated in Tables 8 & 9, and the methodology/calculation was approved by the ACC in Decision No. 69663 and was modified in the 2009 Settlement Agreement, Decision No. 71448. 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 – June 2005 Semi-Annual Report.

# ARIZONA PUBLIC SERVICE COMPANY

## DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

### TABLE 4

#### DSM Electric Savings: July 2010 – December 2010<sup>1</sup>

DSM Program	Gross Peak MW Capacity Savings	Gross Annual MWh Savings	Gross Lifetime <sup>2</sup> MWh Savings	Net Peak MW Capacity Savings	Net Annual MWh Savings	Net Lifetime <sup>2</sup> MWh Savings
<b>Residential:</b>						
Consumer Products	8.2	88,748	536,051	6.4	69,330	419,190
Existing Homes	7.1	9,272	124,477	5.4	7,062	92,949
New Construction	1.9	2,986	59,720	2.1	3,285	65,692
Appliance Recycling	1.2	8,411	50,464	0.7	5,131	30,783
Behavioral	0	0	0	0	0	0
Multi-Family	0	0	0	0	0	0
Low Income <sup>3</sup>	0.2	1,107	19,370	0.2	1,107	19,370
<b>Totals for Residential</b>	<b>18.6</b>	<b>110,524</b>	<b>790,082</b>	<b>14.8</b>	<b>85,915</b>	<b>627,984</b>
<b>Non-Residential:</b>						
Lg Existing Facilities	7.3	71,983	1,021,930	6.7	66,962	950,254
New Construction	0.7	6,545	95,522	0.4	3,685	53,810
Small Business	2.0	11,081	170,534	1.8	9,930	152,801
Energy Information Svcs	0.0	36	547	0.0	36	547
Schools	1.5	11,499	163,159	1.3	10,334	146,578
<b>Total Non-Residential</b>	<b>11.5</b>	<b>101,144</b>	<b>1,451,692</b>	<b>10.2</b>	<b>90,947</b>	<b>1,303,990</b>
<b>Segment Totals</b>	<b>30.1</b>	<b>211,668</b>	<b>2,241,774</b>	<b>25.0</b>	<b>176,862</b>	<b>1,931,974</b>

1. Savings for 2008 and after are MER adjusted, savings prior to 2008 are NOT MER adjusted. Per Decision No. 69663, APS is submitting MER adjusted MW and MWh savings, which started with the January – June 2008 Semi-Annual Report. All Semi-Annual Reports submitted prior to 2008 were based on savings as filed in APS's original DSM Portfolio Plan, before any MER adjustments.
2. Refers to savings over the expected lifetime of all program measures.
3. Semi-Annual Reports submitted prior to the July-December 2007 Report inadvertently reported only annual MWh savings for the Low Income Program.

#### **Definitions**

**Gross Savings** – Demand and energy savings related to the DSM programs prior to accounting for free-riders or spillover.

**Net Savings** – Demand and energy savings related to the DSM programs after accounting for free-riders and spillover.

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

**Spillover** – Refers to indirect energy impacts of the program and estimates savings from customers who take the energy-efficient action as a result of knowledge of the program, but who do not receive an incentive through the program.

# ARIZONA PUBLIC SERVICE COMPANY

## DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

### TABLE 5

#### Year-to-Date DSM Electric Savings: January 2010 – December 2010<sup>1</sup>

DSM Program	Gross Peak MW Capacity Savings	Gross Annual MWh Savings	Gross Lifetime <sup>2</sup> MWh Savings	Net Peak MW Capacity Savings	Net Annual MWh Savings	Net Lifetime <sup>2</sup> MWh Savings
<b>Residential:</b>						
Consumer Products	14.1	151,045	910,370	11.0	117,922	711,158
Existing Homes	16.7	16,081	218,223	9.6	11,959	158,838
New Construction	3.4	5,122	102,440	3.8	5,635	112,684
Appliance Recycling	2.0	13,947	83,678	1.2	8,508	51,044
Behavioral	0	0	0	0	0	0
Multi-Family	0	0	0	0	0	0
Low Income <sup>3</sup>	0.4	1,286	23,263	0.4	1,286	23,263
<b>Totals for Residential</b>	<b>36.6</b>	<b>187,481</b>	<b>1,337,974</b>	<b>26.0</b>	<b>145,310</b>	<b>1,056,987</b>
<b>Non-Residential:</b>						
Lg Existing Facilities	13.2	127,772	1,754,235	12.3	117,260	1,606,505
New Construction	2.9	26,530	395,322	1.9	14,836	221,499
Small Business	3.7	21,404	330,531	3.3	19,181	296,373
Energy Information Svcs	0.1	619	9,292	0.1	619	9,292
Schools	2.8	25,271	369,388	2.4	22,301	324,342
<b>Total Non-Residential</b>	<b>22.7</b>	<b>201,596</b>	<b>2,858,768</b>	<b>20.0</b>	<b>174,197</b>	<b>2,458,011</b>
<b>Segment Totals</b>	<b>59.3</b>	<b>389,077</b>	<b>4,196,742</b>	<b>46.0</b>	<b>319,507</b>	<b>3,514,998</b>

1. Savings for 2008 and after are MER adjusted, savings prior to 2008 are NOT MER adjusted. Per Decision No. 69663, APS is submitting MER adjusted MW and MWh savings, which started with the January – June 2008 Semi-Annual Report. All Semi-Annual Reports submitted prior to 2008 were based on savings as filed in APS's original DSM Portfolio Plan, before any MER adjustments.
2. Refers to savings over the expected lifetime of all program measures.
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#### **Definitions**

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**Spillover** – Refers to indirect energy impacts of the program and estimates savings from customers who take the energy-efficient action as a result of knowledge of the program, but who do not receive an incentive through the program.

# ARIZONA PUBLIC SERVICE COMPANY

## DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

### TABLE 6

#### Program-to-Date DSM Electric Savings: January 2005 – December 2010<sup>1</sup>

DSM Program	Gross Peak MW Capacity Savings	Gross Annual MWh Savings	Gross Lifetime <sup>2</sup> MWh Savings	Net Peak MW Capacity Savings	Net Annual MWh Savings	Net Lifetime <sup>2</sup> MWh Savings
<b>Residential:</b>						
Consumer Products	86.2	683,434	3,896,960	67.8	537,341	3,063,551
Existing Homes	30.7	48,578	696,287	24.1	37,485	532,116
New Construction	16.0	30,287	605,737	15.1	28,283	565,651
Appliance Recycling	2.0	13,947	83,678	1.2	8,508	51,044
Behavioral	0	0	0	0	0	0
Multi-Family	0	0	0	0	0	0
Low Income <sup>3</sup>	1.0	4,909	94,965	1.0	4,909	94,965
<b>Totals for Residential</b>	<b>135.9</b>	<b>781,155</b>	<b>5,377,627</b>	<b>109.2</b>	<b>616,525</b>	<b>4,307,328</b>
<b>Non-Residential:</b>						
Lg Existing Facilities	38.6	334,582	4,564,161	32.7	283,206	3,865,420
New Construction	11.5	159,677	2,278,498	8.9	127,190	1,818,049
Small Business	5.4	32,099	470,144	4.7	27,875	412,036
Building Operator Training	0.2	1,001	12,447	0.1	701	8,713
Energy Information Svcs	0.5	2,774	41,611	0.5	2,774	41,611
Schools	4.7	38,587	570,985	3.8	32,179	477,573
<b>Total Non-Residential</b>	<b>60.9</b>	<b>568,720</b>	<b>7,937,846</b>	<b>50.7</b>	<b>473,924</b>	<b>6,623,403</b>
<b>Segment Totals</b>	<b>196.8</b>	<b>1,349,875</b>	<b>13,315,473</b>	<b>159.9</b>	<b>1,090,449</b>	<b>10,930,730</b>

1. Savings for 2008 and after are MER adjusted, savings prior to 2008 are NOT MER adjusted. Per Decision No. 69663, APS is submitting MER adjusted MW and MWh savings, which started with the January – June 2008 Semi-Annual Report. All Semi-Annual Reports submitted prior to 2008 were based on savings as filed in APS's original DSM Portfolio Plan, before any MER adjustments.
2. Refers to savings over the expected lifetime of all program measures.
3. Semi-Annual Reports submitted prior to the July-December 2007 Report inadvertently reported only annual MWh savings for the Low Income Program.

#### **Definitions**

**Gross Savings** – Demand and energy savings related to the DSM programs prior to accounting for free-riders or spillover.

**Net Savings** – Demand and energy savings related to the DSM programs after accounting for free-riders and spillover.

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

**Spillover** – Refers to indirect energy impacts of the program and estimates savings from customers who take the energy-efficient action as a result of knowledge of the program, but who do not receive an incentive through the program.

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DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:  
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**TABLE 7**  
**DSM Societal Benefits and Performance Incentive**  
**July 2010 – December 2010**

DSM Program	Program Cost	Societal Benefits	Societal Costs	Net Benefits
<b>Residential:</b>				
Consumer Products	\$4,092,440	\$25,054,355	\$4,648,884	\$20,405,471
Existing Homes	\$5,153,851	\$10,804,751	\$6,930,305	\$3,884,375
New Construction	\$841,974	\$7,026,199	\$1,465,108	\$5,561,091
Appliance Recycling	\$646,712	\$1,950,011	\$505,051	\$1,444,960
Behavioral	\$475,000	0	\$475,000	(\$475,000)
Multi-Family	\$14,053	0	\$14,053	(\$14,053)
Low Income <sup>1</sup>	\$1,440,912	\$1,397,998	\$1,397,998	\$0 <sup>2</sup>
<b>Totals for Residential</b>	<b>\$12,664,942</b>	<b>\$46,233,314</b>	<b>\$15,436,399</b>	<b>\$30,796,915</b>
<b>Non-Residential:</b>				
Lg Existing Facilities	\$6,852,132	\$56,927,377	\$14,241,357	\$42,686,020
New Construction	\$1,412,075	\$3,632,682	\$1,747,284	\$1,885,398
Small Business	\$1,132,881	\$12,343,605	\$1,380,519	\$10,963,086
Energy Information Svcs	\$20,763	\$19,704	\$38,783	(\$19,079)
Schools	\$1,290,872	\$10,300,006	\$2,635,626	\$7,664,380
<b>Total Non-Residential</b>	<b>\$10,708,723</b>	<b>\$83,223,374</b>	<b>\$20,043,569</b>	<b>\$63,179,805</b>
<b>Segment Totals</b>				
Measurement, Evaluation & Research	\$1,023,510		\$1,023,510	\$(1,023,510)
Performance Incentive	NA			
<b>Total</b>	<b>\$24,397,175</b>	<b>\$129,456,688</b>	<b>\$36,503,478</b>	<b>\$92,953,210</b>
<b>Performance Incentive This Period<sup>*</sup></b>	<b>NA</b>			<b>NA</b>

1. Program Costs include weatherization and bill assistance. Societal Costs do not include bill assistance because it does not contribute to electric savings.
2. Consistent with the ACC Staff's analysis in Decision No. 68647, the societal benefit is equal to the societal cost, resulting in a benefit to cost ratio of 1.00 and net benefits of 0.

**\*APS has an Annual MWh savings goal, and therefore, has not estimated the Performance Incentive for this 6 month Reporting Period, but has reported the annual Performance Incentive amount in Tables 2 and 8.**

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**DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:  
JULY THROUGH DECEMBER 2010**

**TABLE 8  
DSM Societal Benefits and Performance Incentive  
Year-to-Date, January 2010 – December 2010**

<b>DSM Program</b>	<b>Program Cost</b>	<b>Societal Benefits</b>	<b>Societal Costs</b>	<b>Net Benefits</b>
<b>Residential:</b>				
Consumer Products	\$6,798,216	\$43,118,155	\$7,564,315	\$35,553,840
Existing Homes	\$9,747,397	\$18,917,619	\$12,832,009	\$6,085,610
New Construction	\$1,523,619	\$12,675,632	\$2,482,927	\$10,192,705
Appliance Recycling	\$1,164,991	\$3,233,454	\$922,710	\$2,310,744
Behavioral	\$475,000	0	\$475,000	(\$475,000)
Multi-Family	\$14,053	0	\$14,053	(\$14,053)
Low Income <sup>1</sup>	\$1,947,326	\$1,767,926	\$1,767,926	\$0 <sup>2</sup>
<b>Totals for Residential</b>	<b>\$21,670,602</b>	<b>\$79,712,786</b>	<b>\$26,058,940</b>	<b>\$53,653,846</b>
<b>Non-Residential:</b>				
Lg Existing Facilities	\$11,568,087	\$87,498,414	\$22,012,504	\$65,485,910
New Construction	\$3,415,853	\$14,814,056	\$5,033,913	\$9,780,143
Small Business	\$2,247,547	\$23,472,457	\$2,678,749	\$20,793,708
Energy Information Svcs	\$57,875	\$334,968	\$102,631	\$232,337
Schools	\$2,463,586	\$19,614,061	\$4,697,646	\$14,916,415
<b>Total Non-Residential</b>	<b>\$19,752,948</b>	<b>\$145,733,956</b>	<b>\$34,525,443</b>	<b>\$111,208,513</b>
<b>Segment Totals</b>				
Measurement, Evaluation & Research	\$2,288,490		\$2,288,490	\$(2,288,490)
Performance Incentive Amount	\$6,119,686		\$6,119,686	\$(6,119,686)
<b>Total</b>	<b>\$49,831,726</b>	<b>\$225,446,742</b>	<b>\$68,992,559</b>	<b>\$156,454,183</b>

1. Program Costs include weatherization and bill assistance. Societal Costs do not include bill assistance because it does not contribute to electric savings.
2. Consistent with the ACC Staff's analysis in Decision No. 68647, the societal benefit is equal to the societal cost, resulting in a benefit to cost ratio of 1.00 and net benefits of 0.
3. The ACC approved a revised Performance Incentive calculation in Decision No. 71448, on December 30, 2009, as follows: "The existing Performance Incentive shall be modified to be a tiered Performance Incentive as a % of net benefits, capped at a tiered % of program costs.

<b>Achievement Relative to the EE Goal</b>	<b>Performance Incentive as % of Net Benefits</b>	<b>Performance Incentive Capped at % of Program Costs</b>
Less than 85%	0%	0%
85% to 95%	6%	12%
96% to 105%	7%	14%
106% to 115%	8%	16%
116% to 125%	9%	18%
Above 125%	10%	20%

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**DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:  
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APS's 2010 DSM savings goal of 1.0% of total energy resources ("TER") including the effects of energy efficiency (EE) and distributed energy (DE) is calculated by multiplying TER 30,315,035 MWh by 1.0%, which equals 303,151 MWh. APS achieved this goal with net annual savings for 2010 of 319,507 MWh (see Table 5 above). This achievement relative to EE goal equals 319,507 / 303,151, or 105% achieved, which placed APS in the 96% to 105% PI range shown above. The 2010 PI calculation is shown below as the minimum calculation of 7% of Net Benefits or 14% of Program costs:

<b>Achievement Relative to the EE Goal</b>	<b>Performance Incentive as % of Net Benefits</b>	<b>Performance Incentive Capped at % of Program Costs</b>
96% to 105%	7%	14%
Net Benefits / Program Costs	\$162,573,869	\$43,712,040
Calculated Amount	\$11,380,171	<b>\$6,119,686</b>



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**DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:  
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**TABLE 9  
DSM Societal Benefits and Performance Incentive  
Program-to-Date, January 2005 – December 2010**

<b>DSM Program</b>	<b>Program Cost</b>	<b>Societal Benefits</b>	<b>Societal Costs</b>	<b>Net Benefits</b>
<b>Residential:</b>				
Consumer Products	\$21,209,552	\$180,472,187	\$39,238,655	\$141,233,533
Existing Homes	\$20,873,794	\$43,554,085	\$30,458,785	\$13,095,301
New Construction	\$7,386,830	\$39,044,198	\$9,986,748	\$29,057,450
Appliance Recycling	\$1,164,991	\$3,233,454	\$922,710	\$2,310,744
Behavioral	\$475,000	0	\$475,000	(\$475,000)
Multi-Family	\$14,053	0	\$14,053	(\$14,053)
Low Income <sup>1</sup>	\$7,746,643	\$6,690,141	\$6,690,141	\$0
<b>Totals for Residential</b>	<b>\$58,870,863</b>	<b>\$272,994,065</b>	<b>\$87,786,091</b>	<b>\$185,207,974</b>
<b>Non-Residential:</b>				
Lg Existing Facilities	\$31,345,663	\$171,694,182	\$56,791,676	\$114,902,506
New Construction	\$11,641,478	\$74,301,673	\$23,427,508	\$50,874,165
Small Business	\$4,641,010	\$26,882,881	\$5,377,059	\$21,505,822
Building Operator Training	\$102,205	\$424,302	\$183,392	\$240,910
Energy Information Svcs	\$234,459	\$1,391,780	\$419,181	\$972,599
Schools	\$4,457,959	\$24,767,031	\$7,390,397	\$17,376,634
<b>Total Non-Residential</b>	<b>\$52,422,774</b>	<b>\$299,461,849</b>	<b>\$93,589,213</b>	<b>\$205,872,636</b>
<b>Segment Totals</b>	<b>\$111,293,638</b>	<b>\$572,455,914</b>	<b>\$181,375,304</b>	<b>\$391,080,610</b>
Measurement, Evaluation & Research	\$6,931,951		\$6,931,951	(\$6,931,951)
Performance Incentive	\$14,416,545		\$14,416,545	(\$14,416,545)
<b>Total</b>	<b>\$132,642,134</b>	<b>\$572,201,245</b>	<b>\$202,723,800</b>	<b>\$369,732,114</b>

1. Program Costs include weatherization and bill assistance. Societal Costs do not include bill assistance because it does not contribute to electric savings.
2. Consistent with the ACC Staff's analysis in Decision No. 68647, the societal benefit is equal to the societal cost, resulting in a benefit to cost ratio of 1.00 and net benefits of 0.
3. The ACC approved a revised Performance Incentive calculation in Decision No. 71448, on December 30, 2009, as follows. "The existing Performance Incentive shall be modified to be a tiered Performance Incentive as a % of net benefits, capped at a tiered % of program costs."

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**DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:  
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**TABLE 10  
Net Environmental Benefits<sup>1</sup>**

<b>Reporting Period</b>	<b>Water Mil. Gal<sup>2</sup></b>	<b>Sox Lbs.</b>	<b>NOx Lbs.</b>	<b>CO2 Mil. Lbs.</b>	<b>PM10 Lbs.</b>
<b>July–December 2010 Reporting Period</b>	612	8,597	163,348	1,737	47,720
<b>YTD: January 2010 – December 2010</b>	1,114	15,642	297,193	3,160	86,820
<b>PTD: January 2005 – December 2010</b>	3,465	48,642	924,193	9,827	269,989

- 1. The environmental reductions are based on the net KWh energy savings of all program measures over their expected lifetimes.*
- 2. Some measures will result in customer water savings, which this calculation does not include. Only utility water savings are included in this calculation.*

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

#### **PROGRAM: RESIDENTIAL EXISTING HOMES HVAC**

The Residential Existing Homes Heating, Ventilation, and Air Conditioning ("Residential HVAC") Program is divided into two distinct components, 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 and Duct Test and Repair 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 energy-efficiency by offering incentives for improvements to the building envelope of existing residential homes within the APS service territory. HPwES includes measures that improve the energy-efficiency of the home with air sealing, insulation, shade screens, faucet aerators, and low flow showerheads.

Both components 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 components are discussed individually below:

#### ***a. HVAC Measures – AC Rebates and Duct Test and Repair***

The AC Rebate with Quality Installation measure builds on the existing APS Qualified Contractor program. APS offers financial incentives to homeowners for buying energy-efficiency equipment ( $\geq 13$  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 measure provides financial incentives to customers for having their HVAC system duct work tested for leakage and repaired.

In June 2006, APS implemented the AC Rebate measure. On August 1, 2007, APS began offering the Quality Installation measure to optimize the installation of high-efficiency equipment that meets the AC Rebate measure requirements. This measure has high standards on air conditioning sizing, airflow and refrigerant charge to ensure that after the equipment is installed, it will operate at a high level of efficiency.

On December 31, 2007, APS began the Duct Test and Repair measure which offers financial incentives to customers that test and, if necessary, repair the duct work in their homes.

On April 7, 2009, the ACC approved the combination of the AC Rebate and Quality Installation ("QI") measures along with revised incentive levels. See the January through June 2009 Semi-Annual report for a detailed explanation.

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

On October 7, 2009, the ACC approved APS's request to modify the contractor requirements to offer the AC Rebate and Quality Installation measures. See the July through December 2009 Semi-Annual report for a detailed explanation.

The changes made to the program in 2009 had significant impact in 2010. The program's Societal Cost Test ("SCT") results improved primarily due to much higher participation. For this Reporting Period the HVAC measure's SCT was 1.41 (does not include Home Performance with ENERGY STAR®).

#### **Program Modifications**

No significant program modifications were made to the HVAC part of the Residential HVAC program during this Reporting Period.

#### **Program Goals, Objectives and Savings Targets**

The HVAC portion of the program uses a combination of financial incentives, contractor training and consumer education to promote high-efficiency HVAC systems, the proper installation of this equipment and the testing and repair of the duct work in existing residential homes within the APS service territory.

APS's 2010 Energy-efficiency Implementation Plan approved by ACC Decision Nos. 71460 and 71444 estimated that the energy-efficiency savings expected to result from the HVAC portion of the program could reduce peak demand by approximately 6.7 MW, 7,700 MWh annually and 105,300 MWh over the life of the measures expected to be installed in 2010.

#### **Programs Terminated**

No programs were terminated during this Reporting Period.

#### **Levels of Participation**

During this Reporting Period:

- A total of 7,142 rebates were paid through the HVAC portion of the program. That is 19% more than the same period in 2009. Specifically, APS has paid:
  1. AC Rebate Incentive Levels
    - a. 807 of the \$175 AC rebates for 13 SEER/10.8 EER equipment with QI to customer; \$50 to contractor.
    - b. 4,771 of the \$425 AC rebates for 14 - 16 SEER/10.8 EER equipment with QI to customer; \$50 to contractor.
    - c. 657 of the \$525 AC rebates for 17+ SEER/10.8 EER equipment with QI to customer; \$50 to contractor.
  2. 907 Duct Test and Repair rebates; made up of 1,170 total rebates and 263 tests without repairs. Only the repair (907) rebates are used for calculating the demand and energy savings shown in the savings table below.
- There are currently 206 contractors that can offer the APS AC Rebate. 158 are APS Qualified Contractors. There are 48 Rebate Eligible contractors that entered the program through the new application process approved by the ACC in October 2009, which does not require membership in the Arizona Heat Pump Council. There are now 38 contractors outside the

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

metro Phoenix area compared to 28 at the end of 2009. There are contractors that can offer the rebates currently serving Arizona City, Aquila, Big River, Bouse, Casa Grande, Camp Verde, Chino Valley, Clarkdale, Coolidge, Cornville, Cottonwood, Dewey, Eloy, Flagstaff, Florence, Jerome, Kingman, Lake Havasu, Lake Montezuma, Parker, Payson, Prescott, Prescott Valley, Quartzite, Sedona, Show Low Waddell, Wickenburg, Whitman and Yuma.

- Including both metropolitan area and non-metropolitan training classes, 610 students participated in APS sponsored training courses in order to meet APS Qualified Contractor program training requirements.
- The APS Energy Answer Line provided 727 referrals to customers seeking HVAC service, repair or replacement of their home HVAC system in this Reporting Period.
- There are currently 55 contractors with Building Performance Institute certificates that are receiving Duct Test and Repair referrals. 479 Duct Rebate calls were taken during this Reporting Period. There are eight contractors outside of the Phoenix, which serve Flagstaff, Show Low, Yavapai County and Yuma.
- There were 20,393 visits to the list of AC Rebate contractors on the aps.com website in 2010. The APS Qualified Contractor list, which is posted on aps.com, had 10,326 visits from July – December 2010.
- There were 50,789 unique user visits to the APS Energy Survey home energy audit at aps.com during this Reporting Period. There were 99,365 for the year. Energy savings are not currently being attributed to customers who complete the on-line audit; however, research is being conducted to estimate any resulting savings.

#### Evaluation and Monitoring Activities and Results

During this Reporting Period the Residential Existing Homes Program MER research data collection and analysis activities conducted by Navigant Consulting included:

- Continued to review and update Residential HVAC Measure Analysis Spreadsheets, Analytic Database, and components of program design tool.
- Continued implementing end-use metering data collection study with a focus on Quality Installation and Duct Test and Repair measures.
- Updated Residential HVAC measure costs.
- In the process of conducting customer and trade ally research to determine net-to-gross effects and market influence of the program. Research activities included Delphi research of a panel of industry experts.

#### MER Adjusted Gross kW and kWh Savings

Incentive Type	Number of Units	Annual kWh Savings per Unit	TOTAL Annual MWh Savings	Est. Measure Life	Total Lifetime MWh	Coin. kW Demand Savings Per Unit	Total MW Savings
13 SEER/10.8 EER w/ QI, \$175	807	510	412	15	6,174	0.436	0.4
14 -16 SEER/10.8 EER w/ QI, \$425	4,771	791	3,774	15	56,608	0.616	2.9
17+ SEER/10.8 EER w/ QI, \$425	657	1,260	828	15	12,417	0.997	0.7
Duct Test and Repair <sup>1</sup>	907	1,042	945	10	9,451	1.294	1.2
<b>TOTAL</b>	<b>7,142</b>		<b>5,958</b>		<b>84,650</b>		<b>5.2</b>

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1. *Duct Test and Repair total number of units only shows the number of rebates paid for repair work. The rebates paid for just the Duct test are not included.*

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

In addition to the savings shown above, the HVAC Program includes a number of market transformation efforts, such as contractor training and customer education activities designed to transform the market for energy-efficiency. These elements of the program produce additional energy savings and benefits that are not quantified.

#### **Benefits and Net Benefits/Performance Incentive Calculation**

The MER adjusted net benefits and performance incentive are provided in Tables 8, and 9.

#### **Problems Encountered and Proposed Solutions**

The changes made to the program in 2009 have increased the number of customers participating in the program significantly. The increased volume has required improvements in the rebate processing method and other parts of the program to keep the rebate fulfillment time down. The significantly increased participation in the program also caused the program to exceed the budget approved with the 2010 implementation plan. APS filed a request with the ACC for an increase to the budget. That filing is discussed below.

#### **Costs Incurred**

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

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education <sup>1</sup>	Program Implementation	Program Marketing	Planning & Admin.	Program Total Cost
Res. Existing HVAC (AC Rebates & DTR)	\$3,012,949	\$135,095	(\$15,991)	\$484,906	\$46,176	\$27,275	\$3,690,410

1. *The total for Consumer Education is negative for this Reporting Period due to an accrual in June that was much larger than the actual invoice that was paid later in the year.*

During the Reporting Period, the rebate volume has been much higher than expected. Incentive spending significantly exceeded the budget. The increased volume caused APS to file a request for an increase in the program funding with the ACC on Sept. 27, 2010. An increase of \$3 million was requested and approved by Decision No. 71960 on November 8, 2010. This decision raised the budget of the program to \$9.7 million. In that filing APS estimated that the program would pay 15,000 Air Conditioning and Duct Test/Repair rebates. The program actually paid 14,361 total Air Conditioning and Duct Test and Repair rebates in 2010 with total spending of \$9.74 million (spending includes Home Performance with ENERGY STAR®).

In addition to the \$3 million increase to the total Residential HVAC program budget, APS exercised the budget flexibility that was granted in Decision No. 68488 by shifting 18% of the Appliance Recycling Program and 25% of the Residential New Home Construction Program budgets into the Residential Existing Homes HVAC Program. The 15% budget cap expansion was also utilized for the

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Residential Existing Homes HVAC program. The shift and expansion was necessary to accommodate the 50% increase in rebate volume from 2009. The program had the highest annual participation since the program began while improving its Societal Cost Test (SCT) results.

#### **Findings from all Research Projects**

NA

#### **Other Significant Information**

APS again sponsored a Wrightsoft Manual J sizing calculation class on November 16, 2010, that was promoted and managed by the Electric League of Arizona. APS also completed a Duct Test and Repair customer brochure that APS has begun using at events and distributing to the contractors.

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

- TV ads promoting the program ran on Cox Cable, Fox AZ, Fox Sports, KNXV, KTAZ-TV (Telemundo Spanish), Telefutera and Univision (Spanish) and My45.
- Continued airing NASH Bonk commercial that mentions Duct Repair. That ad campaign has been very popular.
- Radio ads to promote the program ran on KTAR-FM in Phoenix and K-SUN (Spanish).
- Articles in: APS Lifestyles Bill Insert for July – August (AC Rebates).
- 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 energy-efficiency and renewable energy programs. These programs are grouped in one section of the homepage entitled "Green Choice," which is coordinated with the current advertising campaign and makes these programs easier to find for customers.

#### **b. Home Performance with ENERGY STAR®**

The HPwES measure offers home owners a \$99 comprehensive home energy checkup to help identify ways to improve energy-efficiency 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 test and quality assurance protocols then verify installation quality and performance.

In January 2010, the ACC approved HPwES as a new measure under the Residential HVAC program.

The first year of the program experienced strong customer interest and a high volume of program participation. In total, the program completed 2,363 audits in 2010, which exceeded APS's first year target of 1,000 audits. To meet this demand, APS filed a budget extension approved by the ACC in November 2010.

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

#### **Program Modifications**

No significant program modifications were made to the HPwES portion of the Residential HVAC program.

#### **Program Goals, Objectives and Savings Targets**

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

Commission Decision No. 71448 requires the APS HPwES measure to complete a minimum of 1,000 energy audits in 2010 and a total of 3,000 audits between 2010 and 2012.

APS's 2010 Energy-efficiency Implementation Plan approved by ACC Decision Nos. 71460 and 71444 estimated that the energy-efficiency savings expected to result from the HPwES portion of the program could reduce peak demand by approximately 1.6 MW, 2,700 MWh annually and 33,000 MWh over the life of the measures installed in 2010.

#### **Programs Terminated**

No programs were terminated during this Reporting Period.

#### **Levels of Participation**

During this Reporting Period:

- A total of 1,832 contractor rebates were paid through the HPwES for completed and approved energy audits. This brings the 2010 total to 2,363 audits for the HPwES program. This meets and exceeds the 1,000 audits required in 2010. The number of direct install components installed during this Reporting Period are as follows:
  - a. 1,099 1.5 gpm low-flow shower heads with a shower start valve.
  - b. 2,749 1.0 gpm faucet aerators.
  - c. 14,656 compact florescent bulbs.
- The APS HPwES program paid rebates for measures installed in 799 participating homes. Of homes that completed an audit during the Reporting Period, 43.6% went on to install additional measures. The total number of customer rebates paid was 1,621, which averages about two rebates per home. Specifically, APS has paid:
  - a. 911 of the \$250 rebates for duct sealing and repair.
  - b. 163 of the \$250 rebates for the air sealing only.
  - c. 346 of the \$500 rebates for air sealing and attic insulation.
  - d. 128 of the \$250 rebates for attic insulation only.
  - e. 73 of the \$250 rebates for shade screens.
- There are currently 90 qualified HPwES contractors. Contractors must complete the Building Performance Institute's Building Analyst certification and undergo a mentorship with the Foundation for Senior Living Home Improvements prior to becoming active. During this time period, 200 hours of mentorship were completed to further aid in quality improvement and enhanced customer experience. HPwES currently serves: Apache, Cochise, Coconino, Gila,



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Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, and Yuma counties.

- The APS Home Performance with ENERGY STAR® call center has received 1,452 referral inquiries by telephone.
- There were 7,420 visits to the HPwES website from July – December 2010.

#### Evaluation and Monitoring Activities and Results

Since the program launch in March 2010, APS has conducted on going customer satisfaction surveys and collected significant data from completed projects. Evaluation of the first year's results and program performance are currently underway.

#### Gross kW and kWh Savings

Incentive Type	Number of Units	Annual kWh Savings per Unit	TOTAL Annual MWh Savings	Est. Measure Life	Total Lifetime MWh	Coincident kW Demand Savings Per Unit	Total MW Savings
Direct Install Low-Flow Showerheads with Shower Start	1,099	239	263	10	2,627	0.023	0.0
Direct Install Low-Flow Faucet Aerators	2,749	82	225	10	2,254	0.013	0.1
Direct Install CFLs	14,656	43	630	6	3,781	0.006	0.1
HPwES Duct Sealing	911	1,042	949	10	9,493	1.294	1.2
HPwES Air Sealing Only	163	1,667	272	13	3,532	0.892	0.2
HPwES Air Sealing and Attic Insulation	474	1,770	839	20	16,780	0.811	0.4
HPwES Shade Screens	73	1,866	136	10	1,362	1.300	0.1
<b>TOTAL</b>	<b>20,125</b>		<b>3,314</b>		<b>39,829</b>		<b>2.0</b>

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

In addition to the savings shown above, HPwES includes a number of market transformation efforts, such as contractor training and customer education activities designed to transform the market for energy-efficiency. These elements of the program produce additional energy savings and benefits that are not quantified.

#### Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 8, and 9.

Note: Program administration cost per unit is based on the following formula:

$$(\text{units of measure installed} \times \text{incremental cost}) / (\text{total program incremental cost})$$

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**Problems Encountered and Proposed Solutions**

Due to increased participation in the HPwES and the Residential HVAC rebates, APS exceeded the 2010 budget for the Residential HVAC program. To meet increased demand, APS filed a request with the ACC to increase the budget of the Residential HVAC program by \$3 million as mentioned above.

APS identified a problem in delivering the HPwES Air Sealing and Attic Insulation rebate. As designed, customers must air seal their attic and insulate in order to qualify for the \$500 rebate. After the first several months APS found that many homes met the .35 ACH (air changes per hour) industry standard for air sealing, yet still required insulation. To address this problem, APS allowed customers to receive \$250 for insulation, when the air sealing requirement was already met. When the installation of insulation only is included in the cost effectiveness calculations for the HPwES Air Sealing and Attic Insulation measure, the measure remains above the 1.0 SCT threshold.

APS plans to continue this practice and evaluate this change in its measures and evaluation activities. If results are not found to be satisfactory, APS will propose an alternative solution.

**Costs Incurred**

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

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning & Admin	Program Total Cost
Res. Existing HVAC (AC Rebates & DTR)	\$3,012,949	\$135,095	(\$15,991)	\$484,906	\$46,176	\$27,275	\$3,690,410
HPwES	\$708,962	\$19,902	\$0	\$474,459	\$254,378	\$5,740	\$1,463,441
<b>Res. Existing HVAC Total</b>	<b>\$3,721,911</b>	<b>\$154,997</b>	<b>(15,991)</b>	<b>\$959,365</b>	<b>\$300,554</b>	<b>\$33,015</b>	<b>\$5,153,851</b>

**Findings from all Research Projects**

N/A

**Other Significant Information**

In recognition of the ongoing success of the APS energy-efficiency program portfolio, APS was selected by the U.S. Environmental Protection Agency ("EPA") as a 2011 ENERGY STAR® Sustained Excellence Award winner. This is the highest award that can be earned by an ENERGY STAR® partner, bestowed on partners who show sustained excellence in their commitment to energy-efficiency and whose organization is a national model of best practices in advancing energy-efficiency. With the 2011 award, the EPA recognized the company's outstanding contributions to the Home Performance with ENERGY STAR® program, in addition to our ongoing commitment to excellence in energy-efficiency programming.

Home Performance with ENERGY STAR® marketing and consumer/contractor education efforts for this Reporting Period includes:

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- Distribution of a Home Performance with ENERGY STAR® brochure through community events, trade allies, contractors, and other industry partners.
- A stand alone website is available at [www.azhomeperformance.com](http://www.azhomeperformance.com).
- Television ad to promote the program that ran on Cox Cable, Fox AZ, Fox Sports, KNXV, KTAZ-TV (Telemundo Spanish), Telefutura and Univision (Spanish) from July to August and then again in November through December.
- "*Sustaining Arizona*" television special that ran on Cox Channel 7 and on the [aps.com](http://aps.com) website.
- Event based marketing with at the Suns, Diamondbacks, Coyotes, and several trade shows.
- Radio ads to promote the HPwES ran on KMXR, 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 includes information on the HPwES and other APS residential programs.

The [aps.com](http://aps.com) homepage prominently features APS energy-efficiency and renewable energy programs. These programs are grouped in one section of the homepage entitled "Green Choice," which is coordinated with the current advertising campaign and makes these programs easier to find for customers.

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#### **PROGRAM: RESIDENTIAL NEW HOME CONSTRUCTION**

##### **Description**

This program promotes high-efficiency construction practices for new homes. It offers incentives to builders who meet the program's energy-efficiency standards. The program emphasizes the whole building approach to improving energy-efficiency 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 EPA ENERGY STAR® label to prospective homebuyers. To encourage builders to meet the program's high-efficiency standards, APS provides builder incentives of \$400 per home. To encourage builders to meet even higher energy-efficiency standards, the program also offers a higher incentive of \$1,000 per home for builders who meet higher savings levels of 30% compared to standard new construction. This higher tier efficiency standard is approximately double the 15% savings of the current ENERGY STAR® homes program.

##### **Program Modifications**

On June 29, 2009, APS filed with the ACC for approval of a "second-tier" ENERGY STAR® Plus measure that proposes offering a higher incentive of \$1,000 per home for builders that meet a higher energy-efficiency standard than the current measure. The ENERGY STAR® Plus measure was approved by the ACC on March 17, 2010, and was introduced to potential homebuilder participants soon thereafter. To date, seventeen builders have signed up thirty-nine communities and 2,539 lots to participate in this new higher efficiency measure. This program enhancement, combined with the Solar Homes component of the program, represents a significant step on the road to Net-Zero Energy Homes, as ordered by the ACC in the December 2008 Decision No. 70666. In fact, some participating homebuilders are achieving total combined savings from energy-efficiency and solar technologies of more than 70%.

##### **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 energy-efficiency 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 energy-efficiency upgrades will be sustained for the life of the home to produce very cost-effective savings.

APS's analysis of this program, as filed in the 2010 APS Energy-efficiency Implementation Plan, estimates that the energy-efficiency savings expected to result from the Residential New Construction Program in 2010 could reduce peak demand by about 6.6 MW, 9,800 MWh annual energy savings, and 196,000 MWh over the life of the measures expected to be installed in 2010.

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#### **Programs Terminated**

No programs were terminated during this Reporting Period.

#### **Levels of Participation**

During this Reporting Period, APS signed up 403 homes that are committed to being built to ENERGY STAR® program standards and an additional 537 homes that are committed to being built to the new ENERGY STAR® Plus (HERS 70) program standards. At the end of this Reporting Period, there were 45 homebuilders and 173 subdivisions with 22,539 future lots signed up to participate. 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 homebuilder incentives for 751 APS ENERGY STAR® homes at the first savings tier level, and 144 ENERGY STAR® homes at the second tier of energy savings (HERS score of 70 or less) that were completed and connected to the APS system during this Reporting Period. Since the start of the program in 2006, APS has paid incentives on 8,184 ENERGY STAR® homes.

During this Reporting Period, APS held several days of detailed training with participating APS ENERGY STAR® homebuilders. 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 customized construction detail photos and process checklists to ensure implementation accuracy at the job site. During this Reporting Period, APS held seven Success with ENERGY STAR® training sessions with several builders including Elliott Homes, Lennar, Trend Homes, Beazer, and Standard Pacific. In addition, APS provided sales training and/or technical training assistance to numerous Arizona builders during this Reporting Period.

#### **Evaluation and Monitoring Activities and Results**

During this Reporting Period the Residential New Construction Homes program MER research data collection and analysis activities included:

- Revised and updated residential new home building energy simulation models to reflect population of homes participating in the program.
- Currently in process of conducting field research, measurement and verification of performance of non-participating builder homes.
- Designed and in the process of conducting customer and builder research to determine net-to-gross effects and market effects of the program.

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### MER Adjusted Gross kW and kWh Savings

Measure	Number of Homes Completed	Annual kWh Savings per Home	TOTAL Annual MWh Savings	Est Measure Life (yrs)	TOTAL Lifetime MWh	kW Demand Savings Per Home	TOTAL MW Savings
APS Energy Star Homes	751	2,916	2,190	20	43,798	2.0	1.5
Second Tier - HERS 70	144	5,530	796	20	15,926	2.8	0.4
<b>TOTAL</b>	<b>895</b>		<b>2,986</b>		<b>59,725</b>		<b>1.9</b>

The final savings are adjusted for line losses (energy 7.8%, 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 8, and 9.

### Problems Encountered and Proposed Solutions

This program has been successful to date, despite the residential new construction market decline during recent years. APS first indicated the market downturn in our January - June 2008 Semi-Annual DSM Report, and this concern continues at a heightened level given the current economy. While the overall market has been down, the APS program has seen increasing market share, especially as the trend for energy-efficient and "green" homes has grown. However, during this Reporting Period, there continued to be a lack of new home construction activity and lower than anticipated rebates being issued for this program.

### 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
Res. New Home Construction	\$444,400	\$88,591	\$5,559	\$145,406	\$114,639	\$43,378	\$841,973

### Findings from all Research Projects

No findings to report at this time.

### Other Significant Information

In recognition of the ongoing success of the APS energy-efficiency program portfolio, APS was selected by the U.S. Environmental Protection Agency ("EPA") as a 2011 ENERGY STAR® Sustained Excellence Award winner. This is the highest award that can be earned by an ENERGY STAR® partner, bestowed on partners who show sustained excellence in their commitment to

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energy-efficiency and whose organization is a national model of best practices in advancing energy-efficiency. APS has now earned ENERGY STAR® awards for five years running; Partner of the Year in 2007 for the APS Consumer Products program (ENERGY STAR® CFL lighting), Partner of the Year in 2008 and 2009 for the APS ENERGY STAR® Homes program, and the Sustained Excellence Award in 2010 and 2011.

In January of 2012, the national ENERGY STAR® Homes program will be increasing its minimum energy-efficiency standards. This year, APS worked to proactively position the Arizona market for the transition to ENERGY STAR® Version 3. In July, APS held a full day forum on Version 3 with participating program HERS raters. The purpose of the meeting was to ensure that initial communications with builders about upcoming program changes were done in a coordinated and consistent manner. APS and raters discussed all of the Version 3 specifications and checklists in detail. The group reached consensus on the best ways to address key construction details for the Southwest, and the forum participants jointly drafted a program letter to the EPA requesting program clarifications for construction in the Arizona desert climate.

In August, APS sponsored a Builder Breakfast event with the Homebuilders Association of Central Arizona to discuss ENERGY STAR® Version 3 changes. APS moderated the event and all participating HERS raters presented different aspects of Version 3 program changes. The event was very successful in positively communicating the reasons for program changes and the benefits of program updates. Well over 100 homebuilders and trade partner members of the building industry attended meetings/discussions with builders which has been very encouraging, and many are already committing to Version 3.

The APS ENERGY STAR® and Solar Homes program combines demand side management and renewable energy incentives to encourage builders to offer both energy-efficiency and solar features in their new home communities. The program requires builders to meet the standards of the APS ENERGY STAR® Homes program as a pre-requisite for being able to access special homebuilder incentives for solar communities. This is to ensure that homes incorporate efficiency first to enable solar to be as cost effective as possible. To participate, builders commit that all of the homes in a community will be APS ENERGY STAR® homes, and that all will be "solar ready" (pre-wired and plumbed to accommodate future solar PV panels and/or water heaters). In addition, they must commit to installing PV and/or solar hot water systems included in at least 50% of the homes in each participating subdivision. During this Reporting Period there was significant activity in this combined energy-efficiency and solar homes program with several new builders signed to participate. There are currently thirteen participating homebuilders in the APS ENERGY STAR® and Solar Homes program (Beazer Homes, Elliott Homes, Joseph Carl Homes, Keystone, Lennar, Maracay Homes, Meritage Active Adult, Meritage Homes, Monarch Communities, Robson Communities, Shea Homes, Shea Homes Active Adult Lifestyles, and Terraces Townhomes).

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

- Launched a new television ad featuring Steve Nash.
- Completed the design of a program Energy Scale to show consumers just how much more efficient ENERGY STAR® or ENERGY STAR® plus Solar homes are compared to standard construction techniques, as well as compared to older existing homes.

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- Ran billboard campaign in summer 2010 promoting APS ENERGY STAR® Homes. The billboard message was "More Home, Less Energy Bill." The billboards ran in targeted locations near APS ENERGY STAR® Homes communities in the metro Phoenix area.
- Distributed model home sales signage that participating builders can customize with their logo to promote the benefits of ENERGY STAR® homes. The series of signs can be ordered by participating builders and customized directly online at [aps.com](http://aps.com).
- Ran a monthly two-page placement in New Homes Today (magazine targeted to prospective homebuyers).
- Developed a cover page and four-page article insert to run in the July/August issue of New Homes Today magazine to promote the features and benefits of APS ENERGY STAR® Homes.
- ENERGY STAR® feature web pages on [Newhomeswebzine.com](http://Newhomeswebzine.com) – website targeted to prospective Arizona homebuyers.
- Distributed APS ENERGY STAR® Home program book for builder sales agents to use in selling the features of ENERGY STAR® Homes to prospective homebuyers. The books are being distributed through model home sales offices of participating APS ENERGY STAR® builders.
- Distributed 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 which 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.
- Provided information on [aps.com](http://aps.com). Website homepage has been updated to highlight APS energy-efficiency and renewable energy programs. APS ENERGY STAR® Homes program is now featured prominently on [aps.com](http://aps.com).
- Construction Corner at [aps.com](http://aps.com) – web pages targeted to Arizona homebuilders. Features promotion of program benefits for builders.
- Radio ads aired as part of the "Better Tomorrow Starts Today" ad campaign. Focuses on the energy savings and environmental benefits of APS ENERGY STAR® Homes.
- APS ENERGY STAR® Homes TV commercial ran during sports and news segments, and as part of ongoing placement contract with Cox Cable.
- Ran an ad placement in the 2010 Homebuilder's Association member directory, back cover ad placement to promote the program to builders.



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#### **PROGRAM: CONSUMER PRODUCTS PROGRAM**

##### **Description**

The Residential Lighting element of the program promotes high-efficiency EPA/DOE ENERGY STAR® compact fluorescent lamps ("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 at local retail locations 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 and Timer element of the Consumer Products program is designed to improve the energy-efficiency in residential pool operations while maintaining equivalent or better standards for pool sanitation and cleanliness. The program promotes the installation and optimal calibration of energy-efficient variable and dual speed pool pump motors and seasonal timers with rebates ranging from \$75 to \$270.

##### **Program Modifications**

No program modifications during this Reporting Period.

##### **Program Goals, Objectives and Savings Targets**

For the high-efficiency lighting (CFL) element of the program, the goal 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.

For the energy-efficient pools element of the program, the goal is to promote the purchase of high-efficiency variable and dual speed pool pumps and seasonal pool timers. In a typical Arizona home with a pool, the pool pump energy use can make up a significant portion of annual energy use. There are new variable and dual speed pool pump technologies and seasonal pool timers that provide opportunities for significant cost effective savings. These efficient pool products have yet to be widely adopted in the marketplace, although they are proven technologies.

APS's analysis of the overall Consumer Products program, including both the CFL and pools elements of the program, estimates that the energy-efficiency savings expected to result from the program could reduce peak demand by about 17.7 MW and reduce energy consumption by 790,800 MWh over the life of the measures which are expected to be installed in 2010.

##### **Programs Terminated**

No programs were terminated during this Reporting Period.

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**MER Adjusted Gross kW and kWh Savings for CFL's**

Total No. of Units Sold	Units currently in service in APS territory	Wattage	Lighting Watts Saved	HVAC Watts Saved	Hours Per Year	Est. Measure Life (yrs)	Annual MWh Savings	Lifetime MWh Savings	kW Demand Savings	
5,156	4,351	7	33	10	876	6	138.60	832	11	
51,905	43,800	9	31	9	876	6	1,310.74	7,864	106	
23,341	19,696	10	30	9	876	6	570.41	3,422	46	
2,101	1,773	11	29	9	876	6	49.63	298	4	
91	77	11	34	10	876	6	2.52	15	0.2	
3,099	2,615	11	39	12	876	6	98.45	591	8	
6,026	5,085	12	48	15	876	6	235.62	1,414	19	
700,202	590,858	13	47	14	876	6	26,808.16	160,849	2,171	
558,858	471,587	14	46	14	876	6	20,941.37	125,648	1,696	
10,724	9,049	14	51	15	876	6	445.53	2,673	36	
37,898	31,980	15	45	14	876	6	1,389.23	8,335	113	
93,385	78,802	15	50	15	876	6	3,803.58	22,822	308	
1,941	1,638	15	60	18	876	6	94.87	569	8	
13,943	11,766	16	49	15	876	6	557	3,339	45	
23,943	20,204	18	57	17	876	6	1,111.73	6,670	90	
56,775	47,909	19	56	17	876	6	2,589.95	15,540	210	
24,100	20,337	20	55	17	876	6	1,079.76	6,479	87	
622	525	20	65	20	876	6	32.93	198	3	
1,074	906	23	67	20	876	6	58.62	352	5	
202,189	170,615	23	77	23	876	6	12,682.18	76,093	1,027	
6,564	5,539	23	97	29	876	6	518.66	3,112	42	
7,072	5,968	26	64	19	876	6	368.70	2,212	30	
92	78	26	69	21	876	6	5.17	31	.42	
51,420	43,390	26	74	22	876	6	3,099.63	18,598	251	
8,431	7,114	27	73	22	876	6	501.36	3,008	41	
399	337	29	121	37	876	6	39.33	236	3	
25	21	30	95	29	876	6	1.93	12	.16	
1,304	1,100	32	118	36	876	6	125.34	752	10	
81	68	33	117	35	876	6	7.72	46	1	
987	833	42	108	33	876	6	86.83	521	7	
<b>1,893,748</b>	<b>1,598,021</b>						<b>78,755</b>	<b>472,531</b>	<b>6,378</b>	
							<b>Line Loss Factors</b>	7.8%	7.8%	11.7%
							<b>Reserve Capacity Factor</b>			15%
							<b>SUBTOTAL</b>	<b>84,898</b>	<b>509,388</b>	<b>8,081</b>
							<b>In-Service Adjustment*</b>	<b>2,958</b>	<b>17,748</b>	<b>282</b>
							<b>TOTAL</b>	<b>87,856</b>	<b>527,136</b>	<b>8,363</b>

\*The in-service adjustment accounts for savings from bulbs that were sold or provided as giveaways through the program in 2009 but assumed to be placed on the shelf at that time for future use. These bulbs were not counted in 2009, the net

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savings adjustment for CFL savings discounted savings by 10% to account for bulbs purchased or given away through the program but not yet placed in service. In 2010, it is assumed that approximately 1/3 of these bulbs which had been stored for future use have now been placed in service to replace incandescent lamps which have burned out, so these CFLs are now providing energy savings.

#### **Levels of Participation**

During this Reporting Period, the energy-efficient lighting element of the program resulted in sales of 1,879,520 CFLs through participating retail locations. In addition, APS distributed 14,228 CFLs during community events and consumer education seminars, for a combined total of 1,893,748 CFLs distributed during this Reporting Period. There were also approximately 325 retail outlets participating throughout the APS service territory where APS customers could purchase discounted CFLs. Participating retailers during this Reporting Period included: 99 Cents, Ace Hardware, Albertson's, Bed Bath and Beyond, Best Buy, Costco, CVS, Do It Best, Dollar Tree, Family Dollar, Fry's Electronics, Fry's Foods, Go Green World Products, Goodwill Industries, Grocery Outlet, Home Depot, Lighting Unlimited, Lowe's, Premiere Lighting, ProBuild, Sam's Club, True Value, and Walmart.

The pool pump and timers element of the program received approval in January, 2010. As part of program start-up activities, the program reached out to participating product manufacturers, retailers, and pool professionals to enlist their participation. During this Reporting Period, program representatives conducted a number of information events and pump calibration trainings and elicited participation from a wide range of pool product retailers.

The program currently includes 121 participating pool retailers, distributors, and pool builders. During this Reporting Period, six pump calibration training seminars were held with a total of 134 pool professionals trained. In addition, program representatives attended 22 pool industry association meetings and conducted over 400 retail visits to inform pool professionals about the APS rebate program.

During this Reporting Period, the program provided rebates for 362 variable speed pool pumps, 18 dual speed pool pumps, and 75 seasonal pool timers.

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#### **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	# Units	kW Demand Savings per unit	kWh Energy Savings per unit	Measure Life (yrs)	Total Annual MWh	Total Lifetime MWh	Total kW Demand
Var. Speed Pump	362	.231	2,023	10	732	7,323	84
2-Speed Pump	18	.123	1,074	10	19	193	2
Timers	75	.115	1,005	10	75	754	9
<b>Subtotal</b>					<b>827</b>	<b>8,270</b>	<b>94</b>
Line Losses					7.8%	7.8%	11.7%
Capacity Reserve							15%
<b>TOTAL</b>					<b>892</b>	<b>8,915</b>	<b>121</b>

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	87,856	527,136	8,363
Pools	892	8,915	121
<b>TOTAL</b>	<b>88,748</b>	<b>536,051</b>	<b>8,484</b>

#### **Evaluation and Monitoring Activities and Results**

- In order to maximize the savings that can be achieved with a variable speed pool pump, a field calibration report is required for all variable speed motor rebates. The field calibration report documents the before and after installation conditions (where applicable) which provides evidence to help verify savings.
- Continued to review and update CFL Measure Analysis Spreadsheets, Analytic Database, and components of program design tool.
- Completed residential lighting run-time hour study. Results of the study were used to verify residential operating hours and demand coincidence factor and will be included in savings reported. Planning additional study to examine topics such as in-service rate, operating hours of specialty lamps and other factors.

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- Currently conducting research to determine net-to-gross effects and market influence of the program.

#### Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 8, and 9.

#### Problems Encountered and Proposed Solutions

No problems were encountered during this Reporting Period.

#### Costs Incurred

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

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning & Admin.	Total Cost
CFLs	\$2,015,356	\$163	\$815	\$1,415,681	\$291,544	\$67,948	\$3,791,507
Pools	\$105,014	\$0	\$0	\$149,750	\$44,922	\$1,246	\$300,932
<b>Consumer Products Total</b>	<b>\$2,120,370</b>	<b>\$163</b>	<b>\$815</b>	<b>\$1,565,431</b>	<b>\$336,466</b>	<b>\$69,164</b>	<b>\$4,092,440</b>

#### Findings from all Research Projects

No findings to report at this time.

#### 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 can 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.

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 (2 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 extensive community education and customer outreach efforts to promote the CFL program and educate customers. Consumer education events during this Reporting Period included:

- 24 retail events at Home Depot stores throughout APS territory
- 8 retail events at Lowes throughout APS territory
- 1 retail event at ProBuild in Flagstaff

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- 2 retail events at Sam's Club
- Maricopa County Home Show, August
- Meritage Homes green event, August
- Coconino County Fair, Flagstaff, September
- Somerton Energy Fair, September
- Yuma PLAY Day, September
- Taste of Cave Creek, September
- Inter-Tribal Council Event, Prescott, September
- Maricopa County Home Show, October
- Creative Energy Fair, Prescott, October
- Arizona State Fair, Phoenix, October
- Festival Telemundo, Phoenix, October
- Energize Phoenix Expo, October
- Flagstaff Community Power Project event, November
- ASU Green Game, November
- Gila Bend Shrimp Festival, November
- Phoenix Suns Green Game, November
- Arizona Fall League Baseball Games, November
- National Bank of Arizona Energy Fair, November
- Fiesta of Light Parade, December
- CPLC Angeles Del Barrio, December
- Energy Forum, December
- Arizona Cardinals – home games in October-December

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

- Ran "Green Choice" campaign TV spots featuring CFL program messages on Cox Cable, local sports broadcasts (Diamondbacks, Suns) and KNXV TV.
- Created a tool on [aps.com](http://www.aps.com) called the "CFL Calculator." [www.aps.com/main/various/CFL/calculator.html?source=hme](http://www.aps.com/main/various/CFL/calculator.html?source=hme). The tool provides customers with a way to enter all of the light fixtures in their home and see the savings in dollars and greenhouse gas emissions they could achieve by switching to CFLs. The calculator provides recommendations for which type of CFL should be used to replace each bulb in a home and then the tool will print out a custom shopping list for customers to use to purchase exactly the bulbs they need at the store.
- CFL radio spot was aired on local sports broadcasts and local news talk radio.
- Information on the homepage of [aps.com](http://www.aps.com) including a listing of all participating retail locations and a retail locator function that shows that closest stores for any customer throughout the service area based on entering a zip code.
- Public relations and earned media including TV, radio and print articles.
- Articles in the Lifestyles residential newsletter.
- Point of sale signage at all participating retail locations.

In addition, the program conducted a wide range of marketing and advertising activities to raise awareness about the pools element of the program including:

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- Developed program brochure for consumers.
- Developed program web pages on aps.com including basic information about the program, online application forms, video content, answers to frequently asked questions, and a list of all participating pool retailers and professionals.
- Produced a short program video spot with D Baxter (Diamondbacks mascot) that airs on the Jumbotron during Diamondbacks home games and on the Diamondbacks website.
- Produced extensive collateral for in store point of sale materials, including many different styles and sizes of in-store signage.
- Conducted an extensive billboard campaign throughout the Phoenix metro area.
- Conducted radio remote events and radio advertising
- Developed new TV spot that promotes savings from variable speed pool pumps.

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#### **PROGRAM: REFRIGERATOR RECYCLING PROGRAM**

##### **Description**

The program is designed to educate APS customers that their old, operating, extra refrigerator or freezer uses a great deal of energy and that by turning in their extra refrigerator or freezer, they 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 a way to remove their 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 [www.aps.com/turnitin](http://www.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 Refrigerator Recycling Program began on February 1<sup>st</sup> 2010. This program was approved by Decision No. 71444 on December 23, 2009. The primary focus for 2010 has been on program start up and marketing. The marketing strategy emphasizes education to the customer about the inefficiency of their second working refrigerator or freezer, 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, 25 new "green" jobs have been 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 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 as measured on the inside)
- 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 Modifications**

On December 10, 2010, Decision No. 72032, the ACC ordered APS to include extra working Non-Residential refrigerators and/or freezers as part of the APS Refrigerator Recycling Program. These units must still fulfill all of the current eligibility requirements including being within 10-30 cubic feet in size. The program is unable to accept units any larger in size because the recycling facility cannot demanufacture units larger than 30 cubic feet. It is anticipated that fewer than 100 Non-Residential units will be picked up annually.



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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 enabling the ability to track 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 yet another appointment to schedule a refrigerator recycling pickup. This ensures that the old unit doesn't 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 procedures. These units are taken to a Sears containment facility where JACO picks refrigerators and freezers up once a week for recycling and processing.

#### **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. Models sold today use about 1/3 the energy of older units.

The program goal was to recycle 9,516 units in 2010. APS's 2010 Energy-efficiency Implementation Plan approved by ACC Decision Nos. 71460 and 71444 estimated that the energy-efficiency savings expected to result from the Refrigerator Recycling Program could reduce peak demand by approximately 1.5 MW and 60,600 MWhs over the life of the measures that are expected to be installed in 2010.

#### **Programs Terminated**

No programs/measures were terminated during this Reporting Period.

#### **Levels of Participation**

During this Reporting Period, APS recycled 4,853 refrigerators and freezers, and paid \$145,590 in incentives to customers. Units were picked up across APS's service territory statewide. APS closed the year by recycling a total of 8,066 units. While this fell short of our annual target of 9,516, APS was able to reach 85% of goal, despite launching the new program at the end of February.

#### **Evaluation and Monitoring Activities and Results**

Since APS is completing the first year of implementation, the Refrigerator Recycling Program is in the process of conducting process and impact evaluation; therefore, no analysis results are available to report during this period.

#### **MER Adjusted Gross kW and kWh Savings**

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Program	Number of Units Recycled	Annual kWh Savings Per Unit	TOTAL Annual MWh Savings	Est. Measure Life (yrs)	TOTAL Lifetime MWh	Coincident kW Demand Savings Per Unit	TOTAL MW Savings
Refrigerators	4,267	1,785	7,617	6	45,700	0.3	1.1
Freezers	586	1,354	793	6	4,761	0.2	0.1
<b>TOTAL</b>	<b>4,853</b>		<b>8,410</b>		<b>50,460</b>		<b>1.2</b>

The final savings are adjusted for line losses (Energy 7.8%, 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 8, and 9.

#### **Problems Encountered and Proposed Solutions**

During this Reporting Period, the program has been implemented efficiently through JACO Environmental, the implementation contractor. Very few problems have been encountered thus far.

On occasion, customers living in gated communities will forget to coordinate the logistics of access through the entry gate, which sometimes causes an additional pickup to be required.

Customers sometimes comment about the fact that the program does not pick up non-working refrigerators. If this results in a customer complaint, each situation is evaluated on a case-by-case basis. It is likely that their unit will be picked up and recycled as a courtesy to the customer, but the \$30 rebate will not be extended.

#### **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
APS Refrigerator Recycling	\$141,660	\$0	\$0	\$391,377	\$111,586	\$2,089	\$646,712

#### **Findings from all Research Projects**

No findings to report at this time.

#### **Other Significant Information**

- Program marketing efforts during this Reporting Period include the following:
  - Created a TV ad campaign with Steve Nash
  - Newspaper advertising (English/Spanish)
  - Billboard advertising
  - Refrigerator magnets for community events and direct mail
  - August and October bill inserts (English/Spanish)

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- August APS Lifestyles Newsletter (English/Spanish)
  - Refrigerator Give-away Contest at Coconino County Fair
  - Refrigerator Give-away Contest at Yuma P.L.A.Y event
  - Web banner advertising on Pandora.com
  - Direct mail postcard to targeted zip codes (October - November)
  - Ran advertorials in the Arizona Republic (October - December)
- The program marketing strategy for 2010 was to have a consistent print media presence in addition to utilizing internal marketing opportunities such as bill inserts and monthly newsletters throughout the year. APS also ran some digital media on Pandora.com with some success. Newspaper ads ran several times monthly in the following publications:
    - Arizona Republic Newspaper
    - Prensa Hispana (Spanish)
    - Prescott Daily Courier
    - Yuma Sun
    - Flagstaff Arizona Daily Sun
    - Casa Grande Dispatch
    - Sierra Vista Herald/Bisbee Daily Review
    - Douglas Dispatch
- During this Reporting Period APS donated two refrigerators to two families that had entered a raffle contest at two of APS's community outreach events. In September, APS gave away one refrigerator at a Yuma community event, and one at a Flagstaff community event. This gave the program a great deal of exposure and attention, especially within APS's service territory outside of Phoenix.
- According to the EPA Responsible Appliance Disposal (RAD) Program Annual Report, over 1.2 million pounds of durable goods (metal, plastic, glass & rubber) were recycled by APS and JACO for the year in 2010.
- APS discovered that a double counting of energy line losses occurred in the January – June 2010, Semi-Annual Report. Energy line losses of 7.8% were double counted in the Total Annual MWh savings figure of 5,967 MWhs. The corrected figure reflects 5,535 MWhs saved for the 2010 Reporting Period from January to June. This adjustment has been made in Tables 5 and 6 that show the program savings YTD for 2010 and program-to-date.

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#### **PROGRAM: BEHAVIORAL PROGRAM**

##### **Description**

The Residential Conservation Behavior Pilot Program will provide 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 will provide Comparative Home Energy Reports direct mailed to the pilot participants that show how the energy usage in a customer's home compares with similar homes. Coupled with the comparison data, customers will receive recommendations for specific and targeted actions they can take to save energy.

Derived from best practices in behavioral science research, this program approach uses the power of normative messaging to successfully engage and motivate conservation actions across a very high percentage of targeted individuals. Comparing an individual's energy use to what is "normal" in his/her neighborhood has proven to be an almost universally appealing mechanism to grab attention and motivate action. Normative messaging on energy use, combined with highly targeted 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 Modifications**

There are no program modifications to report at this time.

##### **Program Goals, Objectives and Savings Targets**

This program was approved by the ACC in Decision No. 71950, dated November 1, 2010. The program will be implemented beginning in 2011, so there were no energy savings goals for the reporting period of 2010. Some costs were incurred to set up the program for implementation in 2011. Those costs are shown below.

##### **Programs Terminated**

No programs were terminated during this Reporting Period.

##### **Levels of Participation**

NA

##### **Evaluation and Monitoring Activities and Results**

Navigant Consulting will conduct the MER for the Behavioral program in 2011. Planning for MER activities and research are underway, but no MER activities were undertaken during this Reporting Period.

##### **Benefits and Net Benefits/Performance Incentive Calculation**

The MER adjusted net benefits and performance incentive are provided in Tables 8, and 9.

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**Problems Encountered and Proposed Solutions**

During the pilot phase, there have been no problems encountered with implementation to date.

**Costs Incurred**

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

<b>DSM Program</b>	<b>Rebates &amp; Incentives</b>	<b>Training &amp; Technical Assistance</b>	<b>Consumer Education</b>	<b>Program Implementation</b>	<b>Program Marketing</b>	<b>Planning &amp; Admin.</b>	<b>Program Total Cost</b>
Behavioral Program	\$0	\$0	\$0	\$475,000	\$0	\$0	\$475,000

Program expenses over the Reporting Period were limited to Implementation expenses, which were used to cover contractor program costs and expenses in preparation for program rollout.

**Findings from all Research Projects**

No findings to report at this time.

**Other Significant Information**

NA

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#### **PROGRAM: MULTIFAMILY ENERGY-EFFICIENCY PROGRAM**

##### **Description**

The Multifamily Energy-efficiency Program ("MEEP") is a new program introduced as part of the APS 2011 DSM Implementation Plan to encourage energy-efficiency ("EE") improvements in multifamily complexes within the APS service territory. The MEEP received Commission approval on January 6, 2011 as part of Decision No. 72060.

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 off 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. Larger incentives are offered for achieving increasingly higher levels of efficiency.

##### **Program Modifications**

No program modifications were proposed during this Reporting Period.

##### **Program Objectives, Goals and Savings Targets**

The MEEP program objectives are to:

- Reduce overall energy consumption and peak demand in the multifamily housing market segment.
- Promote existing community energy-efficiency 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 energy-efficiency improvements to the landlord and property ownership community.
- Contribute to meeting the APS energy-efficiency program energy savings goals.

##### **Programs Terminated**

No programs were terminated during this Reporting Period.

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### Levels of Participation

MEEP Program rollout and launch is not expected until the end of the first quarter of 2011. No program participants were enrolled during the Reporting Period.

### Evaluation and Monitoring Activities and Results

Navigant Consulting will conduct the MER for the MEEP program in 2011. Planning for MEEP MER activities and research are underway but no MER activities were undertaken during this Reporting Period.

### MER Adjusted Gross kW and kWh Savings

No MER activities were undertaken during the Reporting Period.

### Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted net benefits and performance incentive are provided in Tables 8, and 9.

### Problems Encountered and Proposed Solutions

NA

### Costs Incurred

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

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning & Admin.	Program Total Cost
Multifamily EE Program	\$0	\$0	\$0	\$0	\$0	\$14,053	\$14,053

MEEP is currently in a program launch phase. Consequently, program expenses over the Reporting Period were limited to Planning and Administration. This category is used to cover APS overhead and program management costs.

### Findings from all Research Projects

NA

### Other Significant Information

NA

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## DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

### **PROGRAM: ENERGY WISE LOW INCOME WEATHERIZATION**

#### **Description**

APS's Energy Wise Low Income Assistance Program is designed to improve the energy-efficiency, 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. 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 Modifications**

No modifications for this Reporting Period.

#### **Program Goals, Objectives, and Savings Targets**

- To improve the energy-efficiency 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.
- Decision No. 68647 acknowledged the estimates that the Weatherization component of the Energy Wise Program could serve 382 homes per year (based on APS's annual budget of \$705,000) and result in reduced energy consumption of 763 MWh per year and a demand reduction of 115 kW per year.

The goals for the APS Energy Wise Low Income Weatherization program specified in APS's 2010 Energy-efficiency Implementation Plan, filed on July 15, 2009, estimates that the energy-efficiency savings expected to result from the Low Income Program could reduce peak demand by about 0.2 MW and 30,000 MWh over the life of the measures, which are expected to be installed in 2010.

#### **Programs Terminated**

No programs were terminated during this Reporting Period.

#### **Levels of Participation**

A total of 889 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	504
Health and Safety	0
Repair and Replace	0
Weatherization	385
<b>Total</b>	<b>889</b>

#### **Evaluation and Monitoring Activities and Results**



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Weatherization measures must pass the cost effectiveness test that is detailed in the federal government's Weatherization Assistance Program (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 Department of Commerce Energy Office ("AEO") is the MER contractor for this program, and with information provided by APS, analyzes 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.

MER Information from the AEO report for fiscal year 2010 is provided below:

#### Utility Bill Analysis

An analysis of 235 homes has been completed from July 2007 through January 2010, utilizing APS, Tucson Electric Power, Unisource Gas and Electric and Southwest Gas utility data. This analysis will be ongoing, and new data will be added and reported in the future reports.

Provided are Savings to Investment Ratios ("SIR") for total investment from all funding spent (diagnostics, energy measures and health and safety measures) and for energy related measures 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 spent on diagnostics, energy measures and health and safety measures was 1.19. Health and Safety represented 13% of expenditures.

The combined SIR of all jobs reviewed to date for funds spent on energy measures and diagnostics was 1.35.

The average annual saving per home reviewed was 2,667 kWh and 32 therms of natural gas (gas therms average includes all electric homes).

#### Gross kW and kWh Savings

Of the 889 households participating in the program, a total of 385 homes received weatherization services that contributed to the energy savings.

No. of Homes	Annual kW Savings	Annual kWh Savings	Lifetime kWh Savings
385	148	1,106,885	19,370,488

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

The kW factor used to calculate the savings are based on data from the AEO study of 235 weatherized homes. The study normalized electric and gas savings into dollars with gas savings equaling about 10% of the total. The present value of the dollar savings was converted to "equivalent kWh" at 8 cents per kWh. 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 2,667 kWh per home, based on the current AEO 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 8, and 9. The Performance Incentive calculation does not include the Energy Wise Program because, as indicated in Decision No. 68647, this program has a zero net benefit. Consequently, the net benefits for the Energy Wise Program for this Reporting Period as shown in Table 7 are \$0. However, the spending on the Energy Wise Low Income Weatherization Program is included in the total spending, on which the performance incentive is calculated.

#### Problems Encountered and Proposed Solutions

The American Recovery and Renewal Act ("ARRA") weatherization funding continues to impact the APS Energy Wise Weatherization program. The temporary slowdown in utility weatherization program activities is a direct result of the agencies focus on spending the ARRA funds.

#### Costs Incurred

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

Activity	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning & Admin.	Program Total Cost
Bill Assistance	\$21,326	-			\$2,421	-	\$23,747
Health & Safety		-	-	-	-		\$0
Repair and Replace	-	-	-	-	-	-	\$0
Weatherization	\$1,310,165	\$11,545	\$1,678	\$ 8,118	\$22,703	-	\$1,354,209
3rd Party Manager - Arizona Community Action Association	-	-	-	-	-	-	\$0
APS Program Support	-	-	-		-	\$62,956	\$62,956
<b>Total</b>	<b>\$1,331,491</b>	<b>\$11,545</b>	<b>\$1,678</b>	<b>\$8,118</b>	<b>\$25,124</b>	<b>\$62,956</b>	<b>\$1,440,912</b>

This table displays all Energy Wise Program costs, including Health and Safety, and Repair and Replace. However, these categories are not included in Table 1.

#### Measures: Health and Safety, Repair and Replace Components

Measure	Health and Safety	Repair and Replace
Air Conditioner	0	0
Heat Pump	0	0

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Evaporative Cooler	0	0
Refrigerators	0	0
Water Heaters	0	0

**Findings from All Research Projects**

NA

**Other Significant Information**

APS contracted with the Senior Living Home Improvements division to weatherize low income multifamily housing complexes. A letter was sent to a list of low income housing authorities provided by the Arizona Department of Housing asking if they would be interested in having their low income housing units weatherized. The United Farmworkers Service Center, United Methodist Outreach Ministries ("UMOM") and the Yuma Public Housing Authority responded and were selected for this program. 68 units of the Avondale Haciendas owned by the United Farmworkers Service Center, 40 units of the Casa de Paz Apartments owned and operated by the UMOM New Day Centers, and 101 Public Housing units owned by the Yuma Housing Authority were weatherized.

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

#### **PROGRAM: NON-RESIDENTIAL PROGRAM FOR 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 energy-efficiency 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 100 kW and less. For energy-efficiency applications not covered by the prescriptive incentives, the program offers custom incentives to implement energy-efficiency measures that are evaluated on a case-by-case basis. 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 energy-efficiency of their facilities.

##### **Program Modifications**

Decision No. 68488 requested that APS inform Staff when incentives were paid out over 50% of the incremental cost of the measures. The program temporarily raised the rebate amount for two prescriptive retrofit measures over the 50% incentive to incremental cost. This was to encourage more participation in these measures. The special one-time rebate amount was available for final applications submitted between June 1, 2010 and November 30, 2010. The measures offered were high intensity discharge (HID) lighting and Specialty CFL's.

The program also made a permanent increase for high-efficiency Ice Makers to 55% of the incentive to incremental cost. The change was effective as of June 1, 2010, and does not have a end date.

The short-term and permanent changes in incentive levels sparked some increased participation in these measures. The most notable increase was seen in HID lighting conversions; with lower levels of uptake in ice makers.

Additionally, the program permanently reduced the rebate for programmable thermostats from \$50 per unit to \$40. Applications for programmable thermostats received before June 1, 2010, and paid by September 30, 2010, were paid at \$50 per unit. Applications received after June 1st were reserved at \$40 per unit.

##### **Program Goals, Objectives and Savings Targets**

- Promote and support energy-efficiency 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.
- Overall the Solutions for Business program exceeded the 2010 savings goal by 7% and was under budget by \$2,000,000.

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APS's 2010 Energy-Efficiency Implementation Plan approved by ACC Decision No. 71460 and 71444 estimated that the energy-efficiency savings expected to result from the Large Existing Program could reduce annual peak demand by about 13.1 MW, 89,500 MWh annually and 1,244,000 MWh over the life of the measures expected to be installed in 2010.

### Programs Terminated

No programs were terminated during this Reporting Period.

### Levels of Participation

The Large Existing Facilities Program remains the strongest performing Non-Residential program since its inception. A total of 588 active applications for large existing incentives were paid this Reporting Period, from 329 unique customers including the direct install program. Payments to School Districts and charter schools comprise 95 of the 588 applications. During this Reporting Period, APS paid \$5,122,430 in Large Existing program incentives.

Incentive Status by Fund for Active Applications	Incentives Paid
Large Existing – Prescriptive & Custom	\$4,979,005
Large Existing – Studies	\$143,425
Large Existing – Retrocommissioning Studies	\$0
<b>Total Large Existing Funds</b>	<b>\$5,122,430</b>

In Decision No. 70637, the ACC approved APS's request to continue to track 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. During this Reporting Period, there were 35 study incentives, from 15 customers, paid for a total of \$143,425. Twenty four of the 35 studies have already resulted in implementation of the associated measures. There have been 124 studies completed since program inception. Of those 124 studies, 79 have resulted in energy-efficiency projects applications to date.

### Self-Direction:

On December 23, 2009, the Commission issued Decision No. 71444 which approved Self-Direction.

In this reporting period one (1) customer participated in Self Direction. The installed measure was Metal-oxide coated titanium anodes to replace conventional lead-tin-calcium alloy anodes for use in electrowinning tankhouse for a copper mining process. The entire project entails replacing all 2,548 lead anodes with catalyst-coated titanium anodes. This phase of the project entailed replacing 17 of the 52 cells within the tankhouse (833 anodes).

The total cost of this phase of the project was \$566,796. Since this change out was done solely for the purpose of saving kWh's and did not need to be changed out due to a replace on burnout situation, the incremental cost of the project is equivalent to the project cost.

Total Project Cost: \$566,796

Incremental Cost: \$566,796

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Energy Savings: 774,136 kWh  
Demand Savings: 89.26 kW  
Environmental Savings (generation-side): 5,324 tons CO2  
Water Savings: 2,705,603 gallons

There are also considerable environmental savings as a result of this project that will occur at the project site and have not been considered in this analysis. The removal of lead from the process allows for the elimination of cobalt addition (used to stabilize manganese in the electrolyte), greatly reduced waste-treatment (& water usage) downstream, and also eliminates harmful lead exposure to employees who operate the facility.

#### **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 100 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, 140 Direct Install projects for Large Existing Facilities were paid a total of \$436,368 in incentive payments. Program development and outreach for Direct Install are described in the Small Business section of this Progress Report.

#### **Evaluation and Monitoring Activities and Results**

The Large Existing Facilities program MER research data collection and analysis activities for this Reporting Period included:

- Conducted ongoing review and analysis of Large Existing participant database and calculation algorithms.
- Continued to review and update Non-Residential Measure Analysis Spreadsheets, Analytic Database, and components of program design tool.
- Conducted review of measure incentives and incentive optimization task for selected measures. Updated Measure Analysis Spreadsheets to include incentive optimization routines.
- Conducted ongoing primary and secondary research of key factors and performance variables affecting savings and cost-effectiveness of a wide range of measures.
- Completed a Non-Residential lighting runtime hour and coincidence factor study.
- Continued to update incremental costs for measures promoted by the program.
- Conducted field inspections and monitoring of the performance of water pumping plant energy use as part of the pump test and repair measure.
- Conducting customer and trade ally research to determine net-to-gross effects and market influence of the program.
- Conducting research and assessing the savings resulting from actions taken by participants in APS's training and education programs.

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#### **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 report.

#### **MER Adjusted kW and kWh Gross Savings**

kW SAVINGS <sup>1</sup>	ANNUAL kWh SAVINGS	LIFETIME kWh SAVINGS
7,308	71,983,258	1,021,929,916

1. kW Savings is coincident peak.

The final savings are adjusted for line losses (energy 7.8%, 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 8, and 9.

#### **Problems Encountered and Proposed Solutions**

There are no new problems to report.

#### **Costs Incurred**

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

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement	Program Marketing	Planning & Admin	Program Total Cost
Large Existing Facilities	\$5,122,430	\$56,348	\$35,070	\$1,116,283	\$409,018	\$112,981	\$6,852,130

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

IC - Implementation	IC - Marketing	IC - Education	IC - Technical Services	IC - Total Cost
\$1,116,117	\$381,767	\$25,393	\$28,323	\$1,551,600

#### **Findings from all Research Projects**

NA

#### **Other Significant Information**

The focal point of program development activities centered on conveying program value to increase participation and leveraging program experience by developing technical resources, information and advertisements to engage and educate the public.

This year's partnerships with the Building Owners and Managers Association ("BOMA") resulted in APS being selected as BOMA's Business Ally of the Year for 2010. The award was based on the following support provided during 2010:

- Sponsored two training workshops

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

- Sponsored a congratulatory letter for 2009 Kilowatt Krackdown Participants in Trade Journals
- Promoted the Kilowatt Krackdown Program to their customers
- Actively participated in monthly meetings
- Produced the flyers used in marketing the Kilowatt Krackdown Contest

**1. Trade Ally Development:** The Trade Ally program continues to generate interest from a variety of industry professionals. These professionals can attend a bi-weekly trade ally training meeting to learn about the Solutions for Business program and the benefits of becoming a program trade ally.

Recruitment efforts increased during this reporting period as a staff person was assigned full time to work with contractors. Outreach was done through strategic partnerships with professional associations within the energy and contracting industry, trade show and event participation and program advertisements are ongoing and continue to be effective methods for trade ally outreach.

Program trade allies received two editions of the Solutions for Business Trade Ally Newsletter during this reporting period. Newsletter articles highlighted trade ally projects, provided information on program updates, and included links to useful program information, and upcoming events and training opportunities.

Additional Trade Ally development opportunities centered on providing technical support to new and existing trade allies with enhanced focus on encouraging program participation, increasing program knowledge and improving the quality of trade ally-submitted incentive applications. Efforts to develop and leverage the existing trade ally network included program training opportunities, technical training classes, trade ally events, and program participation in trade ally hosted events.

As a result of the program's focus on trade ally development and recruiting efforts, 76 new trade allies were approved, and at the end of this Reporting Period the program had a total of 292 trade allies.

Trade Allies who have not participated in 2010 have been contacted and either have committed to a project within the next 6 months or have agreed to be dropped from the program. Those agreeing to be dropped are generally either out of business or not working in the commercial market. They will continue to receive communications from the program and are welcome back in with additional/updated training and a valid project.

#### **Trade Ally Events**

A "Trade Ally Steering Committee" meeting was held in November to discuss marketing initiatives and ideas. Participants were selected from past Focus Group attendees and represented Direct Install and the classic program. Their comments have been incorporated in the Trade Ally Program enhancements starting in early 2011.

#### **Participation in Trade Ally Hosted Events**

The Solutions for Business program information was provided at the following trade ally-hosted events:

- Graybar – Open House Event
- Climatec – Open House Event



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#### **2. Customer Awareness and Advertising:**

Outreach efforts focus on finding high-value opportunities to provide the public with program information and energy-efficiency education. This was accomplished with the purchase of advertising and securing of editorial space in a number of publications.

- Advertisements and article placements for the APS Solutions for Business Program during the Reporting Period included the following publications:
  - APWA (Arizona Public Works Association) Newsletter
  - ASBA (Arizona School Boards Association) Quarterly
  - AZRE (Arizona Commercial Real Estate) Magazine
  - Commercial Executive Magazine
  - Electric Times
  - HVACR Today
  - Phoenix Business Journal
  - Chamber of Commerce magazines in Phoenix, Scottsdale, Tempe, and Flagstaff
  - Restaurateur of Arizona
  - Small Business Association ("SBA") Small Business Resource Guide
- Customer awareness and interest was raised through check-presentation events and customer award ceremonies, including Phoenix Elementary School District, Deer Valley Unified School District and County of Yuma.
- Program information was provided in two issues of APS's Success Newsletter billing insert (July and October) during this Reporting Period.
- APS sent a targeted mailing to customers to promote the Direct Install program.

#### Market Segmentation for Outreach

During this Reporting Period, program staff held a series of meetings on market segments. Taking into consideration a number of factors including both quantitative and qualitative experience in the APS marketplace, an outreach strategy was devised using market segments. The success of the school segment outreach in 2010 was a strong indicator that having an outreach person and technical person assigned to a specific segment would be beneficial in meeting future goals.

The market was broken into segments which align with both the applications and the assignments of Key Account Managers. This was to keep the number of segments manageable, to align with past and future interactions with client and customers. Each of the 12 markets have an outreach and a technical person assigned who will be able to provide deeper knowledge of their particular segments in terms of segment motivators, barriers, procurement process, energy consumption patterns, appropriate technologies/ measures, etc., as they relate to energy use and potential savings.

Each market segment has an individual savings goal and outreach and marketing plan based on historical and current participation, potential, and other market conditions. This will allow APS to better track success within segments and quickly adjust for changing market conditions and opportunities.

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This process is complete and all assignments made. This model will become fully operational in January 2011. The program will also produce market specific, best practice checklists, and be able to identify potential dollar savings to customers based on individual energy use.

**3. Generate Program Awareness through key events:** The program participated in the following trade shows and conferences:

- BOMA member lunch presentation in July
- Booth at Arizona Association of School Business Officers (AASBO) Conference in July
- Arizona Public Works Association ("APWA") Trade Show in August
- AZ Manufacturing Council/ AZ Chamber of Commerce Conference in August
- League of Cities Conference in August
- Casa Grande Rotary lunch speaker in September
- Arizona Association for Economic Development ("AAED") Conference in October
- Casa Grande City Council Presentation in October
- Central Arizona Society of Hospital Engineers ("CASHE") Education Committee Presentation in November
- AZ Hotel & Lodging Association Green Hotel Certification Launch in December

#### **4. Technical Training:**

Training courses assist customers in understanding technologies and potential for energy savings. This understanding promotes quicker adoption of new technologies and encourages customers to undertake more in-depth and holistic projects. Classes also allow for interaction between customers, topic experts and contractors who can perform work, thus facilitating the contracting process. Feedback from this educational series indicates customers are more likely to adopt technologies than they would have without the knowledge they gained from class. In 2010, Navigant, the programs' Measurement and Evaluation Contractor, found that these training classes also result in operational MWh and MW savings that were previously unaccounted for. The impact of the 2010 training classes resulted in an additional 1,345 annual MWh savings and 0.646 MW savings. These 2010 training savings were added into this periods (July – December 2010) savings.

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 three trainings that occurred during this Reporting Period.

The three classes held during this Reporting Period resulted in 71 total attendees:

- **Whole Building Design**, on July 21
- **Energy Efficiency Economics** on August 25
- **Energy Information Services** on October 20

Materials were developed for each training session, including class notebooks for participants, class evaluations, invitation fliers, and certificates of completion. Class fliers and registrations forms were sent out to the program's contact list as well as through the Association of Energy Engineers ("AEE") member list and Key Account Managers.

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The Solutions for Business program was presented at each of these programs. Program staff members were available to answer questions and provide guidance on potential projects.

The program sponsored the following training organizations and related classes:

- Green Ideas - LEED Trainings and Sustainable Building Advisor certification
- BOMA – Benchmarking with ENERGY STAR®
- Air Conditioning Contractors of America (ACCA) – Professional Air Conditioning Technician Certification
- Association of Energy Engineers (AEE) – Certified Energy Manager series

APS continued to work with the Air Conditioning Contractors' Association-Arizona Chapter ("ACCA") board on the ACCA Professional Air Conditioning Contractor Certification Program. APS supported the program financially through tuition reimbursement for those contractors who became Trade Allies. During this reporting period APS also held several training courses with ACCA for the revised HVAC Tune Up incentive. APS held an administrative class for paperwork and application processing and a technical training on the Stargate testing device.

APS will continue to search out educational efforts that support market transformation among both the public and the trades.

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## DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

### PROGRAM: NON-RESIDENTIAL NEW CONSTRUCTION AND MAJOR RENOVATIONS

#### Description

The Non-Residential New Construction and Major Renovations program includes three components: 1) design assistance/feasibility studies, 2) custom measures including Whole Building Design, and 3) prescriptive measures. Design Assistance involves efforts to integrate energy-efficiency into a customer's design process to influence equipment/systems selection and specification as early in the design process as possible. Incentives are also available for feasibility studies that help assess savings opportunities from complex applications. Prescriptive incentives are available for energy-efficiency improvements in lighting, HVAC, motors and refrigeration applications.

#### 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.

APS's 2010 Energy-efficiency Implementation Plan approved by ACC Decision No. 71460 and 71444 estimated that the energy-efficiency savings expected to result from the New Construction Program could reduce annual peak demand by about 6.9 MW, 39,200 MWh annually and 607,000 MWh over the life of the measures that are expected to be installed in 2010.

#### Programs Terminated

No programs were terminated during this Reporting Period.

#### Levels of Participation

The impact of the economy is driving significantly fewer new construction starts, only a handful of projects that were started before the economic downturn and are now finishing construction. A total of 37 applications for New Construction incentives were paid to 29 unique customers. Two of the 37 applications are from school districts. In this Reporting Period, \$382,800 in New Construction incentives were paid.

Incentive Status for Active Applications	Incentives Paid
Large New Construction – Prescriptive & Custom	\$332,225
Large New Construction – Studies	\$50,575
<b>Total Large New Construction Funds</b>	<b>\$382,800</b>

In Decision No. 70637, the Commission ordered 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, seven design assistance study incentives were paid for a total of \$50,575. Four of these seven applications have resulted in energy-efficiency projects to date. 36 studies were completed since program inception. Of those 36 studies,

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22 filed applications for energy-efficiency projects. APS Solutions for Business launched the "Whole Building" incentive in January 2010, During this reporting period the program received four Pre-Notification applications, but no projects have been paid.

#### Evaluation and Monitoring Activities and Results

During this Reporting Period the Non-Residential New Construction program MER research data collection and analysis activities included:

- Conducted ongoing review and analysis of participant database and calculation algorithms.
- Continued to review and update Non-Residential Measure Analysis Spreadsheets, Analytic Database, and components of program design tool.
- Conducted ongoing primary and secondary research of key factors and performance variables affecting savings and cost-effectiveness of participating projects.
- Conducting customer and trade ally research to determine net-to-gross effects and market influence of the program.

#### 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 report.

#### MER Adjusted kW and kWh Gross Savings

W SAVINGS <sup>1</sup>	ANNUAL KWH SAVINGS	LIFETIME KWH SAVINGS
660	6,544,544	95,522,444

1. kW Savings is coincident peak.

The final savings are adjusted for line losses (energy 7.8%, 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 8, and 9.

#### Problems Encountered and Proposed Solutions

No new problems to report for this Reporting Period.

#### Costs Incurred

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

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement	Program Marketing	Planning & Admin	Program Total Cost
Non Residential New Const.	\$382,800	\$10,610	\$3,456	\$744,609	\$135,927	\$134,673	\$1,412,075

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

A breakdown of all implementation contractor expenses for this Reporting Period and program is:

DSM Program	IC - Implementation	IC - Marketing	IC - Education	IC - Technical Services	IC - Total Cost
Non Res. New Const.	\$744,609	\$124,091	\$3,456	\$3,854	\$876,010

#### Findings from all Research Projects

NA

#### Other Significant Information

During this Reporting Period, program development activities focused on follow up with projects in progress and increasing program participation. Specific activities are highlighted below.

#### Market Outreach:

Strategic partnerships continue to play an important role in program outreach. During this Reporting Period APS sponsored the Energy Award at the annual awards of the Phoenix chapter of AIA. This win-win 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 (CEUs) through APS's training program and marketing opportunities.

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

New Construction projects have been identified and approached on several fronts. During this Reporting Period, the Solutions for Business program made significant contacts with the contractor community. Program staff has worked with developers and contractors throughout the project development cycle and have been actively engaged in a pipeline list of 31 new construction projects. New starts have been slow for the last 24 months. Some specific examples of New Construction outreach include:

- Monthly networking at construction industry association meetings, including CASHE, the Alliance for Construction Excellence (ACE), the Arizona chapter of the U.S. Green Building Council, and BOMA meetings. This attendance is an important component of lead development for future projects which could participate in the program. It also helps to identify and recruit potential trade allies into the program.
- Tracking ARRA funds, which are going to retrofits as opposed to New Construction.

Project-specific meetings with architecture and engineering firms, developers, contractors and customers continue for projects at all stages of completion. In addition, industry professionals receive program updates and program-related support. In this Reporting Period, APS Solutions for Business program staff held approximately 42 meetings to discuss program details and identify potential incentive opportunities.

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

#### **PROGRAM: SMALL BUSINESS PROGRAM**

##### **Description**

The Small Non-Residential Program provides prescriptive incentives for small Non-Residential customers ( $\leq 100$  kW of aggregated peak monthly demand) for energy-efficiency improvements in measures such as: lighting, heating, ventilation, and air conditioning (HVAC), motors, and refrigeration applications through a simple and straightforward mechanism for program participation. In addition, Small Business customers are eligible for custom efficiency incentives to implement energy-efficiency measures. The program provides incentives for covering a portion of the cost of an energy study that identifies energy saving opportunities. The program also provides educational and promotional materials designed to assist building owners and lease-holders in making decisions to improve the energy-efficiency of their facilities. Direct Install measures were also introduced to the Small Business market in April 2009.

##### **Program Modifications**

There were no program modifications made to the Small Business Program during this Reporting Period.

##### **Program Goals, Objectives and Savings Targets**

- Promote and support energy-efficiency 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 energy-efficiency assessment and referral opportunities among lighting and refrigeration contractors.
- Promote market transformation through APS trade allies, customer outreach and technical training classes

APS's 2010 Energy-Efficiency Implementation Plan approved by ACC Decision No. 71460 and 71444 estimated that the energy-efficiency savings expected to result from the Small Business Program could reduce annual peak demand by about 1.8 MW, 11,000 MWh annually and 170,000 MWh over the life of the measures expected to be installed in 2010.

##### **Programs Terminated**

No programs were terminated during this Reporting Period.

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## DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

### Levels of Participation

A total of 583 applications for Small Business incentives were paid to 563 unique customers. In this Reporting Period, a total of \$816,671 in Small Business program incentives were paid. These incentives were paid through the Classic measures as well as the Direct Install measures. 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	\$815,151
Small Business – Studies	\$1,520
Small Business – Retrocommissioning Studies	\$0
<b>Total Small Business Funds</b>	<b>\$816,671</b>

In Decision No. 70637, the Commission ordered APS to continue to track 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. There were two study incentives paid in the Small Business program during this Reporting Period and there have been five studies completed since program inception. Five project applications have resulted in energy-efficiency projects.

### Direct Install

Direct Install incentives were paid on 521 projects for Small Business customers during this Reporting Period. While small businesses are the primary target for the Direct Install offering, large customers with multiple facilities with 100 kW or less premise demand qualify for Direct Install measure incentives, and schools of any size can participate. In addition to the 521 projects paid to small businesses, an additional 140 Direct Install projects for Large Businesses and Schools were paid. The breakdown of Direct Install incentives and paid projects is listed under item seven below.

#### 1. Active number of contractors and contractor identification:

During this Reporting Period, the following 26 approved contractors participated in the Direct Install measure program.

- Accel Electric Inc.
- American Energy Consultants
- ATS Electric Inc.
- Bamber Electric Company
- Burden Electric LLC
- DAK Electric
- Demand Drop
- Distinctive Electric LLC
- Facility Solutions Group Inc.
- G and A Services LLC
- Generations of Contractors LLC
- Green Fuel Technologies
- Greenlight Electric LLC
- Grogan Electric Inc.



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Hope Construction LLC  
IES Commercial  
Inline Electrical Resources  
J & S Electric LLC  
Jen Electric  
Ker Electric Inc.  
Lone Mountain Electric LLC  
Retro Tech Systems Inc.  
SuperMarket Energy Technologies  
The Signery  
U.S. Energy Services Inc.  
Wilson Electric Services Corp.

Ten (10) contractor training meetings were held and attended by 28 companies interested in becoming approved to participate in the Direct Install measure. Each training meeting provided attendees with 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. Seven (7) new companies were approved for Direct Install measure participation during the last six months of 2010.

During this Reporting Period, the Direct Install program team planned, promoted and implemented a two-day workshop in Flagstaff in partnership with the National Bank of Arizona and numerous local partners on August 24-25. The first day focused on contractor training, the second day focused on customer education.

#### **2. Number of Direct Install jobs completed:**

661 Direct Install projects were paid during this Reporting Period.

#### **3. Dollar value of the Direct Install incentives paid to contractors:**

During this Reporting Period, \$1,544,815 in Direct Install incentives were paid to contractors. This represents 63% 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 \$2,451,779. Customers paid \$906,964 towards these Direct Install projects during this Reporting Period.

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JULY THROUGH DECEMBER 2010

**5 Quantity of each Direct Install measure for which incentives were paid:**

<b>Direct Install Measure</b>	<b>Quantity</b>
Delamping	30,617
T8 Lighting	2,912
Screw-in CFL	2,364
Occupancy Sensors	2,008
Exit Signs	652
Refrigerated Case Fan Motors	218
Anti Sweat Heater Controls	212
Refrigerated Novelty Case Controls	45
Refrigerated Case Evaporator Fan Controls	36
Hard-Wired CFL	29
Occupancy Sensors - Vending Machines	24

**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**

<b>KW SAVINGS</b>	<b>ANNUAL KWH SAVINGS</b>	<b>LIFETIME KWH SAVINGS</b>
3,394	16,067,849	253,839,791

**Year-to-Date**

<b>KW SAVINGS</b>	<b>ANNUAL KWH SAVINGS</b>	<b>LIFETIME KWH SAVINGS</b>
6,010	28,081,907	453,943,031

**Program-to-Date**

<b>KW SAVINGS</b>	<b>ANNUAL KWH SAVINGS</b>	<b>LIFETIME KWH SAVINGS</b>
6,407	29,988,234	483,954,023

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

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

Direct Install Cost	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning & Admin.	Program Total Cost
Period Jul - Dec 2010	\$1,544,815	\$6,923	\$1,314	\$207,959	\$56,034	\$21,844	\$1,838,889
YTD Jan - Dec 2010	\$2,680,910	\$15,704	\$1,661	\$457,000	\$164,361	\$48,852	\$3,368,487
PTD Jan 2005 - Dec 2010	\$2,866,372	\$18,306	\$2,345	\$638,997	\$230,013	\$70,166	\$3,826,198

#### 8. Descriptions of the types of businesses participating in Direct Install:

The Miscellaneous sector participated in the Direct Install measure at the highest rate of frequency and accounted for 51% of Direct Install projects paid during this Reporting Period.

Participation in the Direct Install measure included the following business types:	
College/University	1
Grocery	11
Hotel/Motel	3
K-12 School	30
Medical	18
Miscellaneous	334
Office	42
Process Industrial	10
Restaurant	46
Retail	162
Warehouse	4

#### 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 on which to spread implementation costs. From the program inception through 2008, 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 \$0.016/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 \$3,759,900 over the 2008 program cost rate. [Reduced program costs = (\$0.25 - \$0.016) x 16,067,949 net annual savings.]

#### Evaluation and Monitoring Activities and Results

MER research data collection and analysis activities conducted specifically for the Small Business market include:

- Conducted ongoing review and analysis of participant database and calculation algorithms.
- Continued to review and update Non-Residential Measure Analysis Spreadsheets, Analytic Database, and components of program the design tool.

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

- Conducted review of measure incentives and incentive optimization task for selected measures. Updated Measure Analysis Spreadsheets to include incentive optimization routines.
- Conducted ongoing primary and secondary research of key factors and performance variables affecting savings and cost-effectiveness of a wide range of measures.
- Completed a Non-Residential lighting runtime hour and coincidence factor study.
- Completed measure cost update for multiple measures promoted by the program.
- Conducting customer and trade ally research to determine net-to-gross effects and market influence of the program.

#### **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.

#### **MER Adjusted kW and kWh Gross Savings**

KW SAVINGS <sup>1</sup>	ANNUAL KWH SAVINGS	LIFETIME KWH SAVINGS
2,007	11,081,297	170,533,754

1. kW Savings is coincident peak.

The final savings are adjusted for line losses (energy 7.8%, 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 8, and 9.

#### **Costs Incurred**

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

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning & Admin.	Program Total Cost
Small Business	\$816,671	\$7,444	\$1,413	\$223,612	\$60,252	\$23,489	\$1,132,881

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

DSM Program	IC - Implementation	IC - Marketing	IC - Education	IC - Technical Services	IC - Total Cost
Small Business	\$223,612	\$60,252	\$1,413	\$1,576	\$286,853

#### **Findings from all Research Projects**

Not applicable.

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

#### **Other Significant Information**

In addition to the marketing efforts described for the Large Existing program, specific marketing activities for the Small Business program leveraged small business associations, such as Chambers of Commerce, and provided targeted program education and information. These activities included the following:

- Placed print advertisements in Chamber newsletter ads, the Phoenix Business Journal and the Restaurateur.
- Produced promotional materials for Direct Install, including a brochure and ad, and provided print materials to contractors for distribution.
- A direct mailing with information on Direct Install incentive opportunities targeted to small business customers.

## ARIZONA PUBLIC SERVICE COMPANY

### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

#### **PROGRAM: SCHOOLS PROGRAM**

##### **Description**

The Schools program includes a set-aside budget for K-12 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 Modifications**

ACC Decision No. 71444, (December 23, 2009), approved a goal for APS to serve, the installation of energy saving measures through the Solutions for Business program of at least 100 schools by December 31, 2010. During this Reporting Period, a total of 90 unique schools were paid through APS's Classic and Direct Install programs for a total of 157 unique schools participating this year, including nine through the EIS program.

Decision No. 71444 also approved raising the customer cap for the schools program from \$25,000 to \$100,000.

##### **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.

APS's 2010 Energy-efficiency Implementation Plan approved by ACC Decision No. 71460 and 71444 estimated that the energy-efficiency savings expected to result from the Schools Program could reduce annual peak demand by about 3.8 MW, 18,500 MWh annually, and 279,000 MWh over the life of the measures expected to be installed in 2010.

##### **Programs Terminated**

No programs were terminated during this Reporting Period.

##### **Levels of Participation**

In this Reporting Period, a total of 101 applications from schools were paid incentives, representing 26 unique school districts and charter schools for a total of 90 unique schools. Schools have had a very high level of participation in the program. While school districts comprise approximately 8% of APS's Non-Residential energy use, to date they have received 20% of the paid program incentive funds for their Non-Residential energy-efficiency projects. The self-reported size of the school entity is based on the number of students as submitted on approved applications paid in this Reporting Period as follows:

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<b>Division</b>	<b>Programs</b>	<b># of Applications</b>	<b># of Students</b>
Metro	Prescriptive - Retrofit, Technical Assistance & Studies	3	35,218
Metro	Custom - Retrofit, Prescriptive - New Construction, Prescriptive - Retrofit	6	34,884
Metro	Prescriptive - Retrofit	3	31,691
Metro	Custom - Retrofit, Prescriptive - Retrofit, Technical Assistance & Studies	6	26,559
Metro	Custom - Retrofit, Prescriptive - Retrofit	4	24,438
Metro	Prescriptive - Retrofit	4	23,989
Metro	Prescriptive - New Construction	1	14,515
Metro	Custom - Retrofit, Prescriptive - Retrofit	4	13,258
Metro	Custom - Retrofit, Prescriptive - Retrofit	2	13,249
Non-Metro	Prescriptive - Retrofit	2	11,379
Non-Metro	Custom - Retrofit, Prescriptive - Retrofit	9	10,359
Metro	Custom - Retrofit	15	8,340
Metro	Prescriptive - Retrofit	5	6,252
Metro	Prescriptive - Retrofit, Technical Assistance & Studies	13	5,851
Non-Metro	Prescriptive - Retrofit	1	5,708
Metro	Prescriptive - Retrofit	1	4,449
Non-Metro	Prescriptive - Retrofit	3	2,558
Metro	Custom - Retrofit, Prescriptive - Retrofit	11	2,070
Non-Metro	Prescriptive - Retrofit	1	1,995
Metro	Custom - Retrofit	1	1,280
Metro	Prescriptive - Retrofit	1	418
Metro	Prescriptive - Retrofit	1	329
Non-Metro	Prescriptive - Retrofit	1	197
Metro	Prescriptive - Retrofit	1	151
Non-Metro	Prescriptive - Retrofit	1	74
Non-Metro	Prescriptive - Retrofit	1	67

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

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cover the application is then allocated from the appropriate Large Existing, New Construction or Small Business program budget.

APS paid \$1,747,177 in incentives to schools during the Reporting Period, of which \$1,007,385 was paid from the Schools program budget. The remaining \$739,792 was paid to schools from the Large Existing, New Construction or Small Business program budgets (see table below).

Incentive Status by Fund for Active Applications	Incentives Paid
Schools Budget – Prescriptive, Custom, & Direct Install	\$996,830
Schools Budget – Feasibility, Commissioning Studies	\$10,555
Schools Budget – Retrocommissioning Studies	\$0
<b>Total School Funds</b>	<b>\$1,007,385</b>

Schools Funding Summary:	Incentives Paid
Schools – School Funds	\$1,007,385
Schools – Large Existing Funds	\$727,655
Schools – New Construction Funds	\$12,137
Schools – Small Business Funds	\$0
<b>Total Paid to Schools</b>	<b>\$1,747,177</b>

In Decision No. 70637, the Commission ordered APS to continue to track 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 schools received study incentives during this Reporting Period. There have been 18 studies completed since program inception. Of those 18 studies, 13 have resulted in energy-efficiency projects.

#### **Schools Direct Install**

Direct Install incentives were paid on 29 school projects during this Reporting Period, 24 of which were paid from the Schools fund. Direct Install activities for this period are described in the Small Business Program report.

#### **Evaluation and Monitoring Activities and Results**

During this Reporting Period the Schools program MER research data collection and analysis activities included:

- Conducted ongoing review and analysis of participant database and calculation algorithms.
- Continued to review and update Non-Residential Measure Analysis Spreadsheets, Analytic Database, and components of program design tool.
- Conducted review of measure incentives and incentive optimization task for selected measures. Updated Measure Analysis Spreadsheets to include incentive optimization routines.
- Conducted ongoing primary and secondary research of key factors and performance variables affecting savings and cost-effectiveness of a wide range of measures.



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- Completed a Non-Residential lighting runtime hour and coincidence factor study.
- Completed measure cost update for multiple measures promoted by the program.
- Conducting customer and trade ally research to determine net-to-gross effects and market influence of the program.

**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.

**MER Adjusted kW and kWh Gross Savings**

	<b>KW SAVINGS<sup>1</sup></b>	<b>ANNUAL KWH SAVINGS</b>	<b>LIFETIME KWH SAVINGS</b>
Schools – School Funds	1,491	11,499,372	163,159,237
Schools – Large Existing Funds	341	9,385,223	136,199,198
Schools – New Construction Funds	2	119,621	1,719,038
Schools – Small Business Funds	0	0	0
<b>Total Attributable to Schools</b>	<b>1,834</b>	<b>21,004,216</b>	<b>301,077,473</b>

1. kW is coincident peak.

The final savings are adjusted for line losses (energy 7.8%, 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 8, and 9.

**Problems Encountered and Proposed Solutions**

No problems to report for this Reporting Period.

**Costs Incurred**

Program costs incurred during this Reporting Period are listed below:

<b>DSM Program</b>	<b>Rebates &amp; Incentives</b>	<b>Training &amp; Technical Assistance</b>	<b>Consumer Education</b>	<b>Program Implementation</b>	<b>Program Marketing</b>	<b>Planning &amp; Admin.</b>	<b>Program Total Cost</b>
Schools	\$1,007,385	\$2,746	\$2,467	\$190,327	\$73,280	\$14,667	\$1,290,872

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

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<b>DSM Program</b>	<b>IC - Implementation</b>	<b>IC - Marketing</b>	<b>IC - Education</b>	<b>IC - Technical Services</b>	<b>IC - Total Cost</b>
Schools	\$190,327	\$67,408	\$2,467	\$2,751	\$262,953

**Findings from all Research Projects**

There were no findings from any Research Projects during this Reporting Period.

**Other Significant Information**

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

- 1. Trade Ally Development:** Trade Ally recruitment and support efforts focused on improving program knowledge by providing opportunities for development and training. Outreach efforts focused particularly on the state approved energy service companies (ESCO's) who have contracts for all the stimulus funded projects, and many others since enabling legislation allows districts to use performance contracting.
- 2. Customer awareness and project generation:** During this Reporting Period the schools outreach person first concentrated on stimulus funded projects and then all school districts. One hundred and twenty-three contacts have been made including phone calls, emails and meetings with districts to identify potential projects.
- 3. Coordination with the Schools Facility Board:** While the program has coordinated with the Schools Facility Board ("SFB") since the program launch, briefings were held with the Arizona SFB during this Reporting Period on the Energy Information System (EIS) program, financing and HVAC Tune Up to maximize school use of all programs. Staff attends all SFB meetings.
- 4. Coordination with the Arizona School Board Association (ASBA):** The program advertises in and has submitted articles to the ASBA newsletter in 2010. APS is exploring opportunities to present at association educational seminars.
- 5. Coordination with the APS Schools Key Account Manager.**
- 6. Attending conference and meetings of the Arizona Association of School Business Officials.**

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

#### **PROGRAM: ENERGY INFORMATION SERVICES ("EIS") PROGRAM**

##### **Description**

The EIS Program, which was first made available to APS customers in November 2006, helps large customers (>100 kW) save energy by giving them a better understanding and control of their facilities' electric use. EIS provides data not only regarding usage and demand, but also identifies when, where and how much power is used in specific areas of each facility. This detailed information allows customers to fine-tune equipment use and operations and to document the impact of those changes. Participating customers monitor their electric usage through a web-based energy information system that allows them to receive historical (up to previous day) 15 minute usage and demand graphics. This information can be used to improve or monitor energy usage patterns, reduce energy use, reduce demands during on-peak periods and better manage their overall energy operations.

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

##### **Program Modifications**

No modifications made during this period.

##### **Program Goals, Objectives and Savings Targets**

- Provide monthly energy usage information to participating large 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 energy-efficiency measures and operational practices can reduce their energy expenses.
- Teach participants how to download billing history information and create spreadsheets to chart and graph their energy use, as well as 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 ("O&M") savings; and
- Facilitate analysis of what-if scenarios to help large facility managers assess the benefits of capital improvements or operating adjustments to improve energy-efficiency.
- Ultimately save electric (kWh) energy through simple changes in operations and maintenance (low/no cost savings measures).

APS's 2010 Energy-efficiency Implementation Plan approved by ACC Decision No. 71460 and 71444 estimated that the energy-efficiency savings expected to result from the Energy Information System could reduce annual peak demand by about 0.2 MW, 1,800 MWh annually and 27,000 MWh over the life of the measures expected to be installed in 2010.

##### **Programs Terminated**

No programs were terminated during this Reporting Period.

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**Levels of Participation**

One customer was added to EIS during this Reporting Period resulting in EIS being installed on 3 meters. A total of 34 customers now participate in EIS, representing 205 meters.

**Evaluation and Monitoring Activities and Results**

During this Reporting Period the EIS MER research data collection and analysis activities included:

- Conducted ongoing tracking and review of program participation data.
- Currently conducting participant research including possible field inspections and data collection activities to assess savings achieved by the program.

**MER Adjusted Gross kW and kWh Savings**

Meters	Est. Measure Life (yrs)	kWh Savings per Year	Lifetime kWh Savings	kW Demand Savings <sup>1</sup>
EIS = 3	15	36,000	546,562	5

1. kW savings is coincident peak.

The final savings are adjusted for line losses (energy 7.8%, 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 8, and 9.

**Problems Encountered and Proposed Solutions**

No problems to report for this Reporting Period.

**Costs Incurred**

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

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning & Admin.	Program Total Cost
Energy Information Services	\$1,091	\$11,790	\$0	\$3,404	\$3,646	\$832	\$20,763

**Findings from all Research Projects**

NA

**Other Significant Information**

NA

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

#### **AMERICAN RECOVERY AND REINVESTMENT ACT (“ARRA”)**

ARRA is a federal legislation passed by Congress in February 2009 to stimulate investment, create jobs, and speed economic recovery. ARRA provides for over \$18 billion in energy-efficiency funding. The primary objectives of the energy-efficiency funding are to build jobs, save energy, and build energy-efficiency infrastructure for the long term. The State Energy Program (“SEP”) was allocated \$3.1 billion nationally.

The Arizona Energy Office filed an application for \$55 million of the \$3.1 billion SEP funding and were awarded the funds. The plan includes \$10 million for the State Building Energy Performance Contracting Program and \$20 million for the Energy-efficiency and Renewable Energy in Schools Grant Program. The remaining \$25 million will be distributed to a agriculture grant, 21 Century Grant and utility renewable programs.

Another type of energy-efficiency funding from ARRA is the Energy-efficiency and Conservation Block Grants (“EECBG”), which will provide \$64 million directly to Arizona cities and counties. Cities and counties in APS’s service territory are eligible for approximately two-thirds of these funds. The majority of these funds have been awarded and APS is meeting with the decision makers to ensure APS’s program is leveraged to the fullest extent. Projects have up to three years to be completed and all monies spent.

On December 11, 2008, the Commission issued Decision No. 70637, which approved five of APS’s Non-Residential DSM programs. Decision No. 70637 also included the following provision:

“APS shall continually research and monitor other energy-efficiency rebates and incentives, including tax credits, that may be available to its Non-Residential DSM program participants throughout its service territory; and that the Company shall limit its incentive payments to program participants to ensure that the sum of all known monetary incentives, either paid or available to APS program participants from other entities for the same measure is limited to APS’s established measure cap (such as 50 percent or 75 percent of incremental cost) unless a different cap is ordered by the Commission.”

APS filed for clarification with the Commission on May 8, 2009, as to whether ARRA funds needed to be considered a “known monetary incentive” under Decision No. 70636 or not. The Commission decided in Decision No. 71243 that ARRA funds should not be subject to the existing DSM incentive caps, but that the sum of all incentives, including ARRA, should not exceed 100 percent of the incremental cost of the measure.

#### ARRA Related Items:

- Talking with the State Energy Office to establish what cities will be awarded grants and what type projects they will be implementing.
- Meeting and calling cities and counties that have received ARRA dollars to establish what type of energy-efficient projects they are doing and the project timeline.
- APS has partnered with City of Phoenix on Energize Phoenix Project. This project is targeted toward energy-efficient retrofits with residential and Non-Residential customers. The City of

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Phoenix will be leveraging the incentives with the APS Home Performance Program and Solutions for Business program.

#### **Incentives Paid Out**

Incentives were paid on projects also receiving ARRA funding to:

- Crane ESD
- Navajo County
- Yuma County

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JULY THROUGH DECEMBER 2010**

**FINANCING**

On January 26, 2010, the Commission issued Decision No. 71460, which approved the Non-Residential Customer Repayment Financing option.

The option was approved for schools, municipalities and small businesses and to be fully integrated in the Non-Residential programs such as Large Existing, Small Businesses and Schools. APS has partnered with National Bank of Arizona to offer this financing option. The Financing option was launched in May of 2010 to over 120 trade allies.

<b>Category</b>	<b>Number of Loans</b>	<b>Size of Loans</b>	<b>Amount in Default</b>
Municipalities			
Small	2	\$8,711	0
Schools			
Total		\$8,711	0

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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

#### PORTFOLIO PLANNING: DSM MEASUREMENT, EVALUATION AND RESEARCH

##### Description

On April 12, 2006 in Decision No. 68648, the ACC approved funding for Measurement, Evaluation, and Research ("MER") activities to assist in verifying the impact and cost effectiveness of APS's DSM programs. As required per Decision No. 68648, APS filed MER program plans for Staff's review on August 16, 2007, with the exception of the Energy Information Services ("EIS") MER research plan that was filed on June 24, 2008.

Navigant Consulting provides MER Services for the 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 energy-efficiency;
- Tracking savings measurement to monitor the actual program savings that are achieved; and
- Researching additional opportunities for energy-efficiency.

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

##### Program Modifications

Per ACC Decision No. 69663, APS is required to "use measured savings obtained from APS customers by the MER contractor beginning no later than July 1, 2007; and that the averages of actual measured usage, for both standard and upgraded equipment, should be recalculated by the MER from usage samples for each prescriptive measure based on new measurements from the field no less frequently than every two years."

MER adjusted MW and MWh savings estimates are included throughout this Progress Report for the Reporting Period, as well as Year-To-Date and Program-To-Date results.

##### Program Goals, Objectives and Savings Targets

NA

##### Programs Terminated

NA

##### Levels of Participation

NA

##### Evaluation and Monitoring Activities and Results

Refer to each program section for this information



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### DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JULY THROUGH DECEMBER 2010

#### **kW and kWh Savings**

See MER adjusted savings results in each program section, and in Tables 4, 5, and 6 above.

#### **Benefits and Net Benefits/ Performance Incentive Calculation**

See MER adjusted Net Benefits in Table 7, 8, and 9 above.

#### **Problems Encountered and Proposed Solutions**

NA

#### **Costs Incurred**

Total costs incurred for measurement and evaluation during this Reporting Period were \$1,023,510, with Annual MER costs of \$2,288,490, which is slightly less than the 2010 MER budget of \$2,300,000.

#### **Findings from all Research Projects**

NA

#### **Other Significant Information**

Navigant prepared a draft white paper on the Societal Cost Test (SCT) for conducting benefit/cost analysis of DSM programs in the state of Arizona. The white paper presents recommendations from APS, UniSource Energy, and various DSM Collaborative group stakeholders on the interpretation of inputs and methodologies to be used when developing the societal benefit-cost test as prescribed in the proposed rulemaking on electric energy-efficiency (Docket No. RE-00000C-09-0427). The whitepaper is intended to provide a consistent, efficient, and transparent method to assess the cost effectiveness of DSM activities.

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**DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:  
JULY THROUGH DECEMBER 2010**

**UNRECOVERED FIXED COSTS AND NET LOST INCOME/REVENUE**

Section R14-2-2410 (J) of the Electric Energy Efficiency Standards ("EE Rules") states that "An affected utility, at its own initiative, may submit to the Commission twice-annual reports on the financial impacts of its Commission-approved DSM programs, including any unrecovered fixed costs and net lost income/revenue resulting from its Commission-approved DSM programs." APS views the topic of addressing unrecovered fixed costs resulting from its DSM activities as an important and essential component of its overall DSM Plan, and is pleased that the EE Rules recognize its importance. APS will quantify the financial impacts resulting from its Commission-approved DSM programs in the rate case application it will file with the Commission on June 1, 2011.

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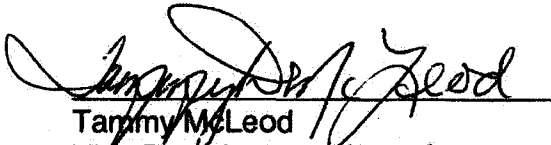
**DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:  
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**CERTIFICATION BY APS  
OF  
DSM SEMI-ANNUAL PROGRESS REPORT  
FOR THE PERIOD:  
JULY THROUGH DECEMBER 2010**

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 Semi-Annual report is complete and accurate in all material respects.

*28 Feb., 2011*

\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Tammy McLeod  
Vice President and Chief Customer  
Officer

# **SAMPLE ADVERTISEMENTS**

## COMMON DUCT SYSTEM PROBLEMS

With everything a homeowner has to consider, it's easy to overlook your home's duct system. It is common for duct systems to have poorly sealed connections, loose fittings or disconnected duct runs. These problems mean cooled air is blowing into your attic, or 140 degree air is being pulled into your air conditioning system to be cooled. In the higher elevations, you are losing heated air. This all wastes energy, costs you money and makes your home uncomfortable.

### An APS study on duct leakage found:

- Up to 33% of a heating/cooling system's airflow could be leaking through the ducts.
- The impact is most severe in ducts installed in attics where temperatures can exceed 140 degrees in the summer.
- On average, almost 15% of cooling energy is wasted due to duct leakage.

### Save big on your energy bill

In Arizona's desert climate, about 50% of your annual energy bill is typically spent on running your heating and cooling system. Fixing duct leaks could save up to \$200 on your annual energy costs.

### Keep your indoor environment clean and comfortable

Duct leakage also exposes you to potential indoor air quality problems. Leaks in your duct system can draw air from areas of your home containing dust, car fumes, pollen and other contaminants, which end up distributed throughout your home.

## GET REBATES UP TO \$250

For more information about the APS Duct Test and Repair Rebate Program, help completing your rebate application form, or help finding a certified contractor call the APS Energy Answer Line at **602.371.3636** or **888.890.9730**. Or find more information online at [aps.com/ductrepair](http://aps.com/ductrepair).

YOUR HOME'S DUCT LEAKAGE COULD  
BE WASTING ENERGY AND MONEY

# APS Duct Test and Repair Rebate Program

Program funded by APS  
customers and approved by the  
Arizona Corporation Commission.



# Get Rebates Up To \$250

KEEP THE AIR IN YOUR HOME CLEAN

**A leaky duct system can cost up to \$200 each year on your energy bill.**

## DUCT SYSTEM OVERVIEW

For most homeowners, as long as your cooling and heating system is working, then everything must be fine. Most duct systems are installed in attics or building cavities—they are out of sight and out of mind. But, what you don't see might be costing you a lot of money and affecting your personal comfort and indoor air quality. Getting your home's duct system tested and repaired is an important part of keeping your heating and cooling costs low while making sure the air in your home is clean and healthy.

The APS Duct Test and Repair Rebate Program offers rebates of up to \$250 for APS customers to have a contractor certified by the Building Performance Institute (BPI) test and repair air leaks in your heating/cooling duct system.



## FINDING THE LEAKS

It can often be difficult to tell if you have a problem by just looking at your home's duct work. In many homes, insulation wrapped around metal ducts conceals the leaks. That is why it is important to have a contractor certified by BPI test your duct system.

### General Indicators of Duct Leakage

- Discoloration on the insulation wrapped around the ducts.
- Your home has a room or rooms that are difficult to cool and heat.
- Your home has a room or rooms that always seem stuffy in the summer.
- During the winter, air coming from your heat pump feels lukewarm or cold.
- The inside of the ducts get dirty frequently.



### The Certified Contractor will:

- Test the duct system to determine amount of air leakage.
- Identify leakage locations.
- Make sure duct connections are securely fastened.
- Make sure duct connections are sealed with long lasting sealant.
- Repair unsealed or poorly fitting grills.
- Retest the duct system for leakage after the repairs and sealing are completed.
- Help you fill out the rebate application form.

After having a Certified Contractor test and repair your home's duct system, your home should use energy more efficiently. This should save you money every month, and makes your home more comfortable. Using energy more efficiently also reduces greenhouse gases and helps preserve our environment.

## How to Get a Duct Test and Repair Rebate

- 1 Have a contractor, certified by BPI perform the duct test and repairs. Call the APS Energy Answer Line at 602.371.3636 or 888.890.9730 for a free referral to a certified contractor or go to [aps.com/ductrepair](http://aps.com/ductrepair) to find a list of participating contractors.
  - 2 The certified contractor will help you fill out the APS Duct Test and Repair Rebate application form.
  - 3 Send the completed application and a copy of the paid invoice to:  
**APS Residential Rebate Program, 2001 N. 3rd Street, Suite 106, Phoenix, AZ 85004**
- To qualify for the rebate, the work must be performed by a contractor certified by BPI; and your application must be received by APS within 6 months of your test and repair date.

# 2010 Fall Campaign Highlights

- CFL sales increased substantially!
  - September - October more than 600,000 were sold; **45% higher than 2009!**
  - October 31, 2009 - October 31, 2010 CFL sales increased more than 32% overall
  - As of Oct 31, 2010, more than 11.8 million ENERGY STAR CFLs have been sold since 2005
- Web traffic increased by more than 30% in October
- “Get in the Game” road tour included 8 BOGOs and 21 community events, October through November
- The Suns VIP Experience contest had more than 4,000 entries
- 900+ ad placements (radio, tv, print, web) in a mix of Spanish and English in October
- We collectively produced more than 80 pieces of collateral including educational event signs, promotional material, bill inserts, POP, fliers and more.....**It was a success!**

**Visit these participating contractors at the Home Show to learn more about APS rebate programs.**

<b>Home Plumbing &amp; Co.</b> 1000 N. 10th St. Phoenix, AZ 85016 Phone: 602-998-1111 Website: www.homeplumbing.com	<b>Home Pro Services</b> 1000 N. 10th St. Phoenix, AZ 85016 Phone: 602-998-1111 Website: www.homeproservices.com	<b>Home Pro Services</b> 1000 N. 10th St. Phoenix, AZ 85016 Phone: 602-998-1111 Website: www.homeproservices.com	<b>Home Pro Services</b> 1000 N. 10th St. Phoenix, AZ 85016 Phone: 602-998-1111 Website: www.homeproservices.com
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**Energy Efficient Lightbulbs**  
Visit us today to learn more about the benefits of ENERGY STAR CFLs.

**APS Retailer of the Month**  
OCTOBER 2010  
ACE HARDWARE MISSA  
Visit us today to learn more about the benefits of ENERGY STAR CFLs.

**Coleque un Foco CFL on Cada Lampaara**  
**Compre un Foco CFL, y Obtenga Otro GRATIS!**  
Visit us today to learn more about the benefits of ENERGY STAR CFLs.

**Shoot for a CFL in Every Socket**  
Visit us today to learn more about the benefits of ENERGY STAR CFLs.

**True or False:**  
Visiting **aps.com/SMART** can help you save money on your energy bill.

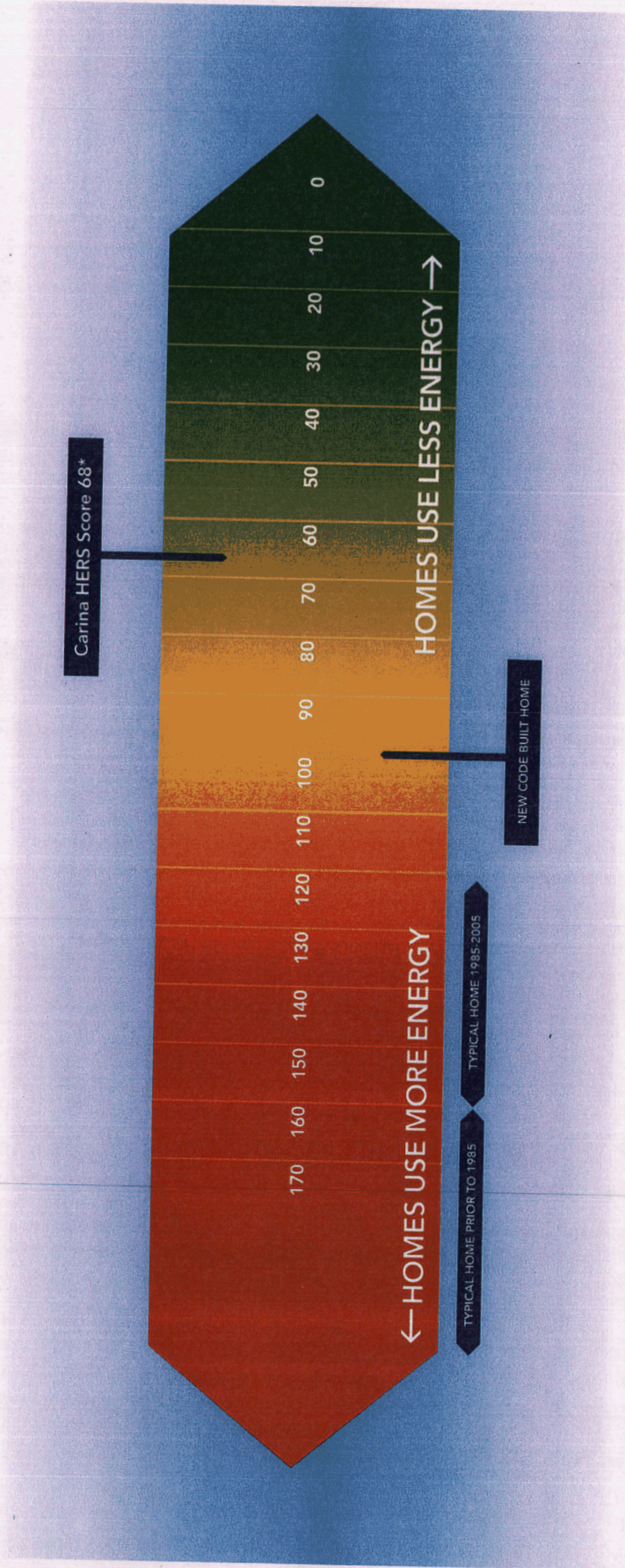
**Shoot for a CFL in Every Socket.**  
Learn how on the APS Get In the Game road tour. Click to learn more.

# LENNAR

Community: Asante  
Plan: Carina

## How does your home compare on the EnergyScale?

The EnergyScale helps you compare the energy efficiency scores of new and/or existing homes. Lower HERS\* Score numbers mean less energy costs to operate the home.



The Energy Scale is based on the well established Home Energy Rating System (HERS) index, a scoring system established by the Residential Energy Services Network (RESNET). For more information please visit [www.energystar.gov](http://www.energystar.gov).







SAVE ENERGY AND MONEY WITH APS

## Is Your Home Wasting Energy?

Energy waste hides everywhere in our homes, and it is not only costing you money, it's making your home less comfortable. With an APS Home Performance with ENERGY STAR® Checkup, a certified contractor will diagnose the ways your home wastes energy. The checkup will help you take advantage of up to \$1,000 of APS rebates for sealing your ducts, reducing air leaks, upgrading insulation and adding window shade screens. Your contractor will also install up to 1 low-flow showerhead, 3 low-flow faucet aerators and 10 CFL bulbs. It's a \$500 value for only \$99.

Costs Only <b>\$99</b> (\$500 Value)	Get up to <b>\$1000</b> In rebates	Save up to <b>30%</b> In energy costs
--------------------------------------------	------------------------------------------	---------------------------------------------

877.850.8358 [aps.com/checkup](http://aps.com/checkup)



This program is funded by APS customers and is approved by the Arizona Corporation Commission.

## Get an APS Home Performance with ENERGY STAR® Checkup

Energy waste hides everywhere, and it is not only costing you money, it's making your home less comfortable.

Costs Only  
**\$99**  
(\$400 Value)

Get up to  
**\$1000**  
in rebates

Save up to  
**30%**  
in energy costs

877.850.8358 [aps.com/checkup](http://aps.com/checkup)

This program is funded by APS customers and is approved by the Arizona Corporation Commission.



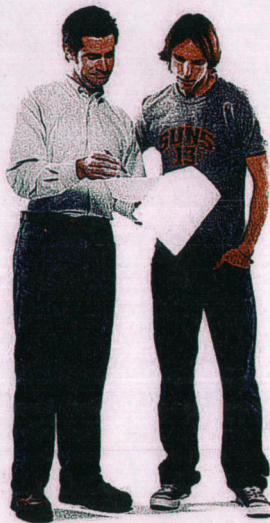
GET IN THE GAME WITH APS

**ENERGY ASSIST #8**

**SCHEDULE AN IN-HOME ENERGY STAR®  
CHECKUP FOR JUST \$99 AND FIND VALUABLE  
WAYS TO SAVE ENERGY IN YOUR HOME.**

**—STEVE NASH #13**

It's often difficult to detect energy leaks and inefficiencies hidden in your house. An APS Home Performance with ENERGY STAR® Checkup will diagnose these areas, giving you the tools to lower your energy bill while creating a more comfortable and energy-friendly home.



With an APS Home Performance with ENERGY STAR® Checkup, a certified contractor will diagnose the energy inefficiencies in your home, so you can make the most of the energy you use.

**The \$99 ENERGY STAR Home Checkup includes:**

- A CUSTOM HOME PERFORMANCE ASSESSMENT REPORT
- 1 LOW-FLOW SHOWERHEAD
- 3 LOW-FLOW FAUCET AERATORS
- 10 CFL BULBS

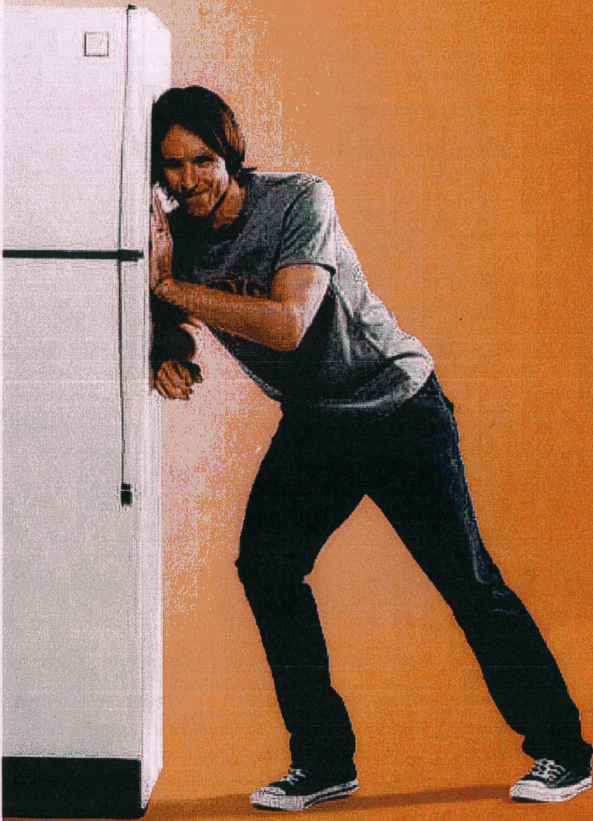
You'll also be able to take advantage of up to \$1,000 of APS rebates for sealing your ducts, reducing air leaks, upgrading insulation and adding window shade screens.

**To find a certified Home Performance contractor and schedule an APS Home Performance with ENERGY STAR Checkup, go online at [www.azhomeperformance.com](http://www.azhomeperformance.com) or call 877.850.8358.**

Program funded by APS customers and approved by the Arizona Corporation Commission.



GET IN THE GAME WITH APS



STEVE NASH #15 - PHOENIX SUNS

# Recycle Your Old Fridge and Score \$30.

Old refrigerators and freezers waste a lot of energy and money. Recycle yours with APS today. You don't have to radically change your life to make an impact. You don't even have to break a sweat: We'll haul that fridge away for free. And you'll get a \$30 rebate. Plus, you'll save up to \$100 a year in energy costs.

Get a  
**\$30**  
rebate

Save up to  
**\$100**  
in energy costs

**FREE**  
pick-up

To schedule a free pickup visit  
[aps.com/turnitin](http://aps.com/turnitin) or call 877.514.6654.



This program is paid for by APS customers and approved by the Arizona Corporation Commission. Refrigerators and stand alone freezers must be in working condition and between 10 and 30 cubic feet using inside measurements. APS contracts with JACO Environmental, an appliance recycler, to pick up and recycle the units. APS residents must own units being recycled. Limit two units per residential address. Additional restrictions may apply.

## Schedule your **FREE** refrigerator or freezer pick-up today.

### FOLLOW THESE SIMPLE STEPS:

1. Make sure your old appliance is working and is a minimum of 10 cubic feet in size.
2. Tell your salesperson your old appliance qualifies for the APS \$30 recycling rebate.
3. Call 1.877.514.6654 or visit [aps.com/turnitin](http://aps.com/turnitin) **PRIOR** to delivery of your new appliance to confirm eligibility.
4. You will be given a 7-digit confirmation number. Write this number along with your name and phone number on the attached sticker.
5. Place this peel-off sticker on the right side of your refrigerator or freezer in the top right corner.
6. The team that delivers your new appliance will remove the old unit. Your \$30 rebate check will arrive via mail within 4-6 weeks.

Place this sticker on the top right corner of your old refrigerator or freezer.

NAME

PHONE NUMBER

CONFIRMATION NUMBER

ADVERTISEMENT

## Fridge Recycling Makes Money for the Holidays, Saves Money for the New Year

Old, secondary refrigerators or freezers kept running in garages and basements can put a chill on holiday spending plans by wasting energy and unnecessarily driving up electric costs. APS offers its customers an easy solution that pays \$30 for having outdated, energy-guzzling refrigerators and freezers picked up and recycled free of charge.

The APS Refrigerator Recycling Program provides the labor and transportation to haul these appliances to a recycling facility. Residents are mailed a \$30 rebate check, and start saving money on energy bills as soon as the second refrigerator or freezer is hauled away. In fact, older refrigerators often use three times more energy than newer, more energy-efficient models. That can pencil out to as much as \$100 saved throughout the year.

Participation is easy and quick. APS customers only need to call 1-877-514-6654, or visit [aps.com/turnitin](http://aps.com/turnitin) and schedule a time for a crew from appliance recycler JACO Environmental, to come by and pick up the old appliance for free. The APS Refrigerator Recycling Program covers the removal of up to two units per household. Refrigerators and freezers must be in working order, with an inside measurement of 10 to 30 cubic feet.

"Now's the time to recycle that old refrigerator or freezer, receive a \$30 rebate and save \$100 on your energy costs for 2011," said Dresden Osterman, APS Refrigerator Recycling Program Coordinator. "With the holidays around the corner, this is a nice opportunity to get some extra cash. APS customers also will benefit by eliminating a source of wasted energy while saving money on their electric bills."



The old refrigerators and freezers are transported to a recycling facility where units are processed into cell phones, laptop computers or metal construction rebar through a process that recycles 95 percent of each refrigerator or freezer. Even the old foam insulation is safely incinerated to generate electricity and return it back to the power grid.

"By recycling older refrigerators or freezers, you save money, the country saves valuable resources and we all help save the environment," said Michael Dunham of JACO Environmental.

ADVERTISEMENT

# APS Will Pay You for Your Extra Refrigerator or Freezer

*Earn \$30 and a free pick up through the APS Refrigerator Recycling Program*

APS customers contemplating a fall clean up can save themselves a lot of work, not to mention plenty of money, by taking advantage of a rebate program that will pay you to pick up old, operable, energy-wasting refrigerators and freezers.

The APS Refrigerator Recycling Program offers customers a FREE pick up and a \$30 rebate for a chance to haul away your extra refrigerator and freezer - typically kept as secondary storage units in the garage or laundry room. In addition to the rebate, participants can save as much as \$100 a year in additional energy costs.

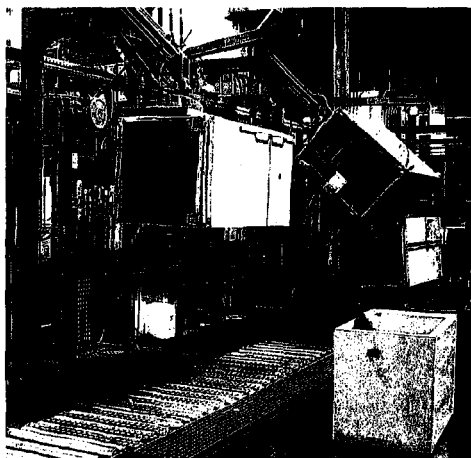
Older refrigerators and freezers, especially those built before 1990, consume up to four times more energy than new, more efficient models.

That whirring noise your older unit makes? That's the sound of the compressor switching on - again and again - to cool a few beverages or leftovers. It also is the sound of extra money disappearing into thin air.

The APS Refrigerator Recycling Program offers a fast and easy way to save that money. The program provides for the removal of up to two units per household. Appliances to be recycled must be in working order with an inside measurement of 10 to 30 cubic feet.

Participation is easy. APS customers just need to call 1-877-514-6654, or visit [aps.com/turnitin](http://aps.com/turnitin) to schedule a pick up.

"Taking advantage of the APS Refrigerator Recycling Program is a fast way to get a good start on your fall clean up, and the long-term savings make it a smart way to lower your energy bills," said Dresden Osterman, APS Refrigerator Recycling Program Manager. "On top of the practicality, the program also gives our customers a way to do their share to protect the environment."



Once picked up, the old refrigerators and freezers are transported to a recycling facility in Phoenix, operated by JACO Environmental. The units are dismantled and recycled into cell phones, laptop computers or metal construction rebar through a process that returns up to 95 percent of each recycled refrigerator or freezer back into the manufacturing stream. Even the old foam insulation is safely incinerated to generate electricity and return it back to the power grid.

Just as important, the recycling process provides an effective and environmentally safe alternative to conventional appliance disposal, which is dumping the units into a landfill.

In landfills, the old appliances rust away and eventually leach toxic oils, mercury and greenhouse-emitting gases from the insulation into the environment. But through JACO's process, those toxic materials are safely extracted during recycling.

"Refrigerator and freezer recycling programs, such as the one offered by APS, not only save customers money, they save valuable energy and help save the environment," said Michael Dunham of JACO Environmental. "It's a win-win, win."



SAVE ENERGY AND MONEY WITH APS

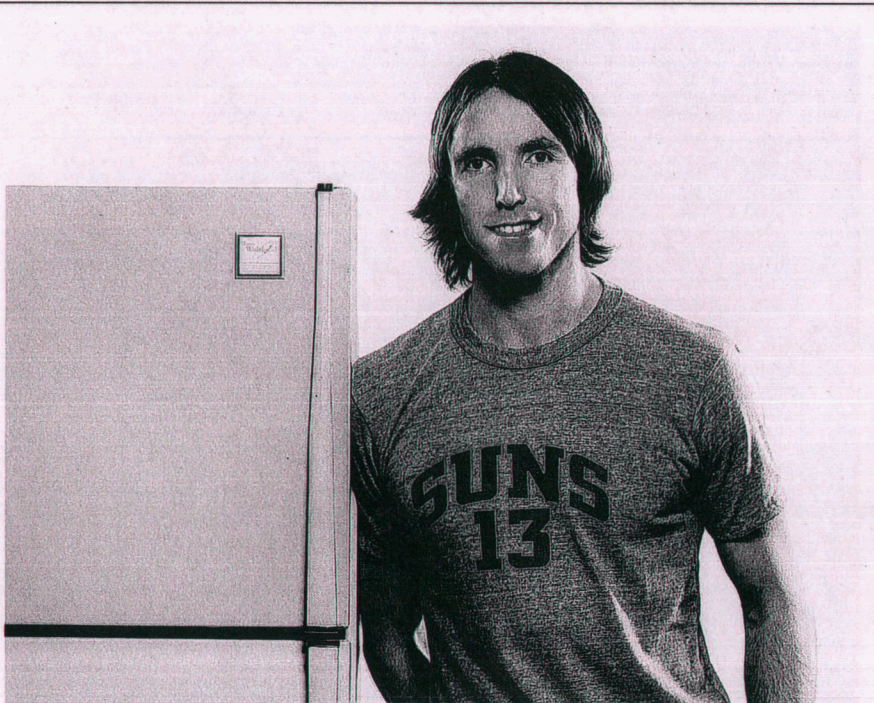
## Turn In Your Old Refrigerator.

Old refrigerators and freezers waste a lot of energy and money. Recycle yours with APS today. You don't have to radically change your life to make an impact. You don't even have to break a sweat. We'll haul that fridge away for free. And you'll get a \$30 rebate. Plus, you'll save up to \$100 a year in utility costs.

**Schedule a free pickup today.**  
[aps.com/turnitin](http://aps.com/turnitin) or 877.514.6654

This program is paid for by APS customers and approved by the Arizona Corporation Commission. Refrigerators and stand alone freezers must be in working condition and between 10 and 30 cubic feet. APS residents must own units being recycled. Limit two units per residential address. Additional restrictions may apply.

**APS**



GET IN THE GAME WITH APS

# Bench Your Backup Fridge. Turn it in and Get Some Cash.

Old refrigerators and freezers waste a lot of energy and money. Recycle yours today. APS will haul away that fridge for free and you'll get a \$30 rebate. Plus, you can save up to \$100 a year in energy costs.

Get a  
**\$30**  
rebate.

Save up to  
**\$100**  
in energy costs.

Schedule a free pickup today at  
[www.aps.com/turnitin](http://www.aps.com/turnitin) or call 877-514-6654.

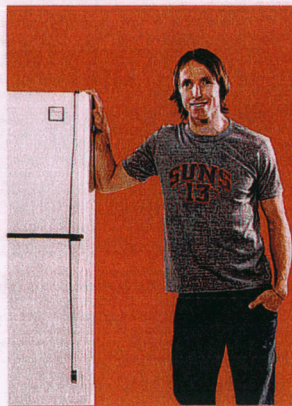


This program is paid for by APS customers and approved by the Arizona Corporation Commission. Refrigerators and stand alone freezers must be in working condition and between 10 and 30 cubic feet using inside measurements. APS contracts with JACO Environmental, an appliance recycler, to pick up and recycle the units. APS residents must own units being recycled. Limit two units per residential address. Additional restrictions may apply.




AGENCY: CAMPBELL FISHER DESIGN ADDRESS: 5013 E. WASHINGTON, SUITE 230, PHOENIX, AZ 85034  
PHONE: 602.955.2707 CONTACT: ANDY MROZINSKI PUBLICATION: ARIZONA DAILY SUN NAME: BENCH BACKUP FRIDGE  
LIVE: NA TRIM: 4.8889IN X 8IN BLEED: NA DUE TO PUB: MAY 26 2010



A photograph of Steve Nash, a professional basketball player, leaning against a white refrigerator. He is wearing a grey t-shirt with "SUNS 13" printed on it and dark pants. The background is a solid orange color.

**BENCH YOUR BACKUP  
FRIDGE AND GET  
SOME CASH.**  
—STEVE NASH #13

**877-514-6654**  
Call or visit [www.aps.com/turnitin](http://www.aps.com/turnitin)  
to schedule a free pick up today!

The logo for APS (American Pick Up Service), featuring the letters "APS" in a bold, black, sans-serif font with a stylized orange and black graphic element to the left.

# Arizona Lifestyle

AUGUST-SEPTEMBER 2010

## TAKE A TRIP TO SOLARVILLE

You don't have to be a member of the APS Renewables superhero team to take a trip to Solarville! Just go to the Arizona Science Center to visit the new interactive exhibit that gives you a hands-on look at how renewable energy is created.

Sponsored by APS, Solarville is located in the Science Center's APS Solar Gallery, which offers a range of educational attractions. There's the Biogas Farm, generating power from cow manure; the Do-It-Yourself Wind Turbine, made from found materials and the Algae Power exhibit that harvests algae to make energy.

Want to get even more hands-on? Create your own energy with Pedal Power or test your strength against solar power with Muscle Match. Other exhibits give you an up-close look at how solar panels are made and teach ways to save more energy in your home.

**The Arizona Science Center is located at 600 E. Washington Street, in Phoenix. Call 602.716.2000 for more information.**

## THE RENEWABLES™



## ENERGY-SAVING, MONEY-SAVING TIPS FOR SUMMER

It's monsoon season in the desert, when high heat and humidity combine for the most uncomfortable time of year. High heat and humidity also make your air conditioner work harder and use more energy, which increases your electric bill. But you can use less energy and save money this summer by following these tips.

- Set your thermostat at 79 degrees or higher when you are home and 85 degrees when you are away. The higher you set your thermostat, the lower the cost to cool your home.
- Barbecue. When you cook outside, you avoid heating up the kitchen and your air conditioner will run less. You'll also save on the electricity you'd have used to power your oven and stove.
- Use exhaust fans. If you have to cook inside, turn on the exhaust fan to remove heat and humidity from your kitchen. Turn on the bathroom fan to remove heat and humidity when you bathe or shower.

**For 30 more summer saving suggestions, visit [aps.com/tips](http://aps.com/tips).**

## HAVE YOUR OLD REFRIGERATOR OR FREEZER HAULED AWAY, GET \$30 AND SAVE ON YOUR BILL

Did you know that your old extra refrigerator or freezer is likely costing you \$100 in electricity every year? The APS Refrigerator Recycling Program will arrange to have your refrigerator or freezer picked up for free, have it recycled at a local facility and give you a check for \$30. You'll save money on your electric bill, reduce energy use and help the environment.

The program is limited to the removal of two full-size units per household and the refrigerator or freezer must be operable to be eligible.

**Visit [aps.com/turnitin](http://aps.com/turnitin) for more details or call 877.514.6654 to schedule pick-up service.**

CONTINUED ON BACK

## GOING SOLAR? HIRE AN APS QUALIFIED SOLAR INSTALLER

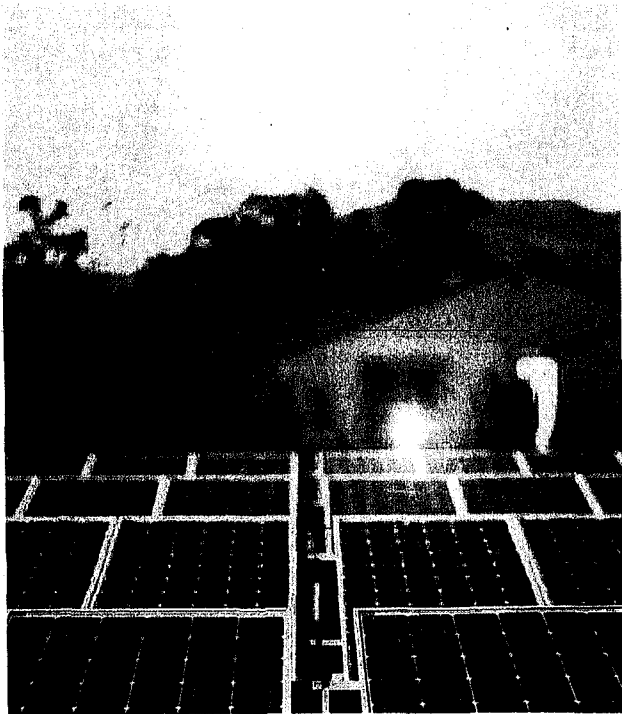
Once you've decided to install a photovoltaic solar system or solar water heater on your home, you'll need a qualified contractor to do the work. And the APS Qualified Solar Installer\* (QSI) Program makes finding one a lot easier. Installers who hold the QSI certification have passed a series of courses that cover the entire range of issues related to solar installations, inspections, incentives, sales standards and ethics.

APS only certifies installers who:

- Hold the applicable Arizona Registrar of Contractors (ROC) license(s) and are in good standing.
- Are knowledgeable on solar system design, installation practices and APS policy and procedures.
- Have high customer satisfaction ratings.
- Are committed to a rigorous continuing education program for their company.

Get a free, referral to an APS Qualified Solar Installer that serves your area at [aps.com/findsolar](http://aps.com/findsolar) or by calling the APS Energy Answer Line at 602.371.3636 or 888.890.9730.

\*APS Qualified Solar Installer contractors are not affiliates or agents of APS, and APS assumes no liability for their products or services.



## SIGN UP FOR SUREPAY

Take the hassle and worry out of paying your electric bill. Sign up for SurePay, APS's free automatic payment program. You will enjoy:

**Convenience**—your bill is paid automatically each month, even while you're away.

**Security**—no more checks to write and mail, or leave in an unsecured mailbox.

**Control**—we'll send you a monthly statement to confirm your monthly payment amount and the exact date it will be deducted from your bank account.

To sign up for SurePay, sign the form on the lower portion of your bill (page 2) and return it in your payment envelope or visit [aps.com/newsletter](http://aps.com/newsletter) to download an enrollment form.

## IS YOUR RATE PLAN RIGHT FOR YOU? FIND OUT WITH RATE COMPARISON

Not everyone uses energy the same way. To help you manage your usage and save money on your electric bill, APS offers a variety of rate plans. To find the plan that's best for you, use Rate Comparison, our quick and easy online tool. Log in to your account at [aps.com](http://aps.com) (if you are not already registered you'll need to do so), click on the Rate Comparison box and follow the instructions. If you are eligible for a new rate, you'll see how energy costs on your current plan compare to estimated costs on other available rate plans. If you find a rate that's better for your lifestyle, you can easily switch to it online to start saving.

For other helpful ways to manage your account online, go to [aps.com/SMART](http://aps.com/SMART).

## APS KIDS ONLINE

Would you like to raise some little Thomas Edisons? Turn your kids on to [aps.com/kids](http://aps.com/kids), where they can learn all about electricity and how to save energy, plus try out their scientific skills with cool experiments. The site is created for kids from kindergarten to 6th grade, so junior scientists can pick the section appropriate for their ages. Visit [aps.com/kids](http://aps.com/kids) today.

Programs funded by APS customers and approved by the Arizona Corporation Commission.