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BEFORE THE ARIZONA CORPORATION COMMISSION

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GARY PIERCE  
Chairman  
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Commissioner  
PAUL NEWMAN  
Commissioner  
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Commissioner

Arizona Corporation Commission

DOCKETED

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IN THE MATTER OF THE APPLICATION  
OF ARIZONA PUBLIC SERVICE  
COMPANY FOR APPROVAL OF THE  
COMPANY'S 2012 DEMAND SIDE  
MANAGEMENT IMPLEMENTATION  
PLAN

DOCKET NO. E-01345A-11-0232  
DECISION NO. 73089  
ORDER

Open Meeting  
March 27 and 28, 2012  
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. Arizona Public Service Company ("APS" or "the Company") is certificated to provide electric service as a public service corporation in the State of Arizona.
2. APS provides service in the counties of Apache, Cochise, Coconino, Gila, La Paz, Maricopa, Navajo, Pima, Pinal, Yavapai and Yuma. The Company services over 1.1 million customers in Arizona, including approximately 984,000 Residential and 120,000 Non-Residential customers.
3. On June 1, 2011, APS filed its Application for Approval of the Company's 2012 Demand Side Management ("DSM") Implementation Plan. On June 24, 2011, APS filed a Revised 2012 Plan ("2012 Plan"), replacing the Company's prior filing in its entirety. According to APS, the Revised 2012 Plan corrected a discrepancy in lifetime megawatt-hour savings calculations and other related information. On October 20, 2011, APS filed a revised Attachment  
...

1 3 to the 2012 Plan, reducing the DSM Adjustment Charge (“DSMAC”) to reflect Commission  
2 Decision No. 72582 which did not approve the Company’s ev-READY project as a DSM program.

3 **I. Executive Summary (2012 Plan Overview)**

4 4. In its 2012 Plan, APS proposes to continue implementation of existing energy  
5 efficiency and demand response programs that have been previously approved by the Arizona  
6 Corporation Commission (“Commission”). APS’ current portfolio includes a mix of programs  
7 targeted to multiple customer segments as detailed below.

8 Residential Programs

- 9
- 10 • Consumer Products
  - 11 • Existing Homes
  - 12 • New Construction
  - 13 • Appliance Recycling\*
  - 14 • Low Income\*
  - 15 • Conservation Behavior\*
  - 16 • Multifamily Energy Efficiency
  - 17 • Shade Trees\*

18 Non-Residential Programs

- 19
- 20 • Large Existing Facilities
  - 21 • New Construction and Renovation
  - 22 • Small Businesses
  - 23 • Schools
  - 24 • Energy Information Systems\*

25 5. No changes are proposed in APS’ 2012 Plan for previously approved programs  
26 marked with an asterisk. As such, Staff is not addressing these programs at this time.

27 6. The 2012 Plan includes new measures for existing programs in addition to  
28 modifying some existing programs, detailed below in Table 1. APS is also introducing a new pilot  
program that integrates renewable energy and energy efficiency to explore savings gained from  
system-wide improvements. The 2012 Plan also requests Commission approval for limited  
authority to shift budgeted funds between Residential and Non-Residential program sectors and  
clarification that APS must comply only with the energy efficiency reporting requirements of the  
Electric Energy Efficiency Standards (“EE Rules”), Arizona Administrative Code (“A.A.C.”) R14-  
2-2401, et seq., rendering miscellaneous energy efficiency reporting requirements ordered in other  
dockets unnecessary.

...

**Table 1. 2012 Proposed Energy Efficiency and Demand Response Program Changes**

<b>Residential Consumer Products</b>	
• Lighting	• Update savings on 100 Watt equivalent compact fluorescent lamps (“CFLs”) due to change in baseline from Energy Independence and Security Act <sup>1</sup> standards
• Swimming Pools	• Update baseline from single speed pumps to dual speed pool pumps due to State legislation becoming effective
<b>Residential Existing Homes</b>	
• Residential HVAC	• Replace HVAC equipment rebates with Quality Installation Rebates
• Home Performance with ENERGY STAR <sup>®</sup>	• Add a performance-based rebate measure as an alternative rebate structure
<b>Residential New Construction</b>	
• ENERGY STAR <sup>®</sup> Homes	• Update the builder and home rater incentives to move builders to new ENERGY STAR <sup>®</sup> Version 3 standard and higher 2nd tier level
<b>Residential Multifamily</b>	
• New Construction/Major Renovation	<ul style="list-style-type: none"> <li>• Redesign the Builder Option Packages (“BOP”) to allow builders flexibility in meeting the efficiency standards for new construction</li> <li>• Add a performance path to BOPs</li> <li>• Add an energy study incentive</li> </ul>
<b>Non-Residential Solutions for Business</b>	
• Add Prescriptive Measures	<ul style="list-style-type: none"> <li>• Energy Management Systems (“EMS”)</li> <li>• Six LED lighting measures</li> </ul>
<b>Other</b>	
• Codes and Standards	• Encourage energy savings through adherence to local building codes and support energy codes and standards updates
• EE/RE Pilot	• Introduce a new pilot program that integrates energy efficiency, renewables, and smart grid initiatives
• ev-Ready	• Implement APS’ Electric Vehicle Readiness Demonstration Project including the use of demand response strategies

7. The 2012 Plan addresses the implementation strategy APS will use to achieve compliance with the EE Rules. The 2009 Settlement Agreement, approved in Decision No. 71448 (December 30, 2009), stated, “If higher goals are adopted by the Commission for 2010, 2011 or

<sup>1</sup> Section 321. Efficient Light Bulbs, HR6 Energy Independence and Security Act of 2007 (December 17, 2007). Available at [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110\\_cong\\_bills&docid=f:h6enr.txt.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:h6enr.txt.pdf)

1 2012 in another docket, then those higher goals will supersede the goals [in the Settlement  
2 Agreement], as will any higher performance incentives.” In 2012, the Electric Energy Efficiency  
3 Standard requires that APS achieve 1.75 percent savings of retail energy sales from the prior year  
4 or cumulative (2011 and 2012) savings of 3.0 percent.<sup>2</sup> This goal results in savings of 533,298  
5 megawatt-hours (“MWh”). The 2009 Settlement Agreement requires APS to achieve only 1.5  
6 percent energy savings in 2012 based on total energy resources needed to meet retail load, or  
7 479,169 MWh. The 2012 goal established in the Energy Efficiency Standard results in a higher  
8 savings goal and, therefore, supersedes the 2012 goal established in the 2009 Settlement  
9 Agreement.

10 8. The Bill Impacts, Energy Savings, Net Benefits, Cost Effectiveness, Environmental  
11 Benefits, and Measurement, Evaluation, and Research for the 2012 Plan are presented in Sections  
12 VI – IX. The proposed budget for the 2012 Plan totals \$81,189,026. This level of investment  
13 results in over 533,300 MWh of cost-effective energy savings. Using the Societal Cost Test  
14 (“SCT”), the new and modified programs proposed in the 2012 Plan have a benefit-cost ratio of  
15 1.59.

## 16 **II. 2012 Proposed Program Changes**

17 9. Existing residential programs to which APS proposes modifications include the  
18 Consumer Products Program, the Existing Homes Program, the Residential New Construction  
19 Program, and the Multifamily Energy Efficiency Program.

20 10. The 2012 Plan proposes to add Energy Management Systems and LED Lighting  
21 measures to the relevant programs from APS’ existing non-residential program offerings which are  
22 marketed as “APS Solutions for Business.” The four relevant non-residential program offerings to  
23 which the additions apply include the Large Existing Facilities Program, the New Construction  
24 Program, the Small Business Program and the Schools Program. The other program in APS  
25 Solutions for Small Business is the Energy Information Services Program; no additions or  
26 modifications are proposed for this program.

27  
28 <sup>2</sup> A.A.C. RI4-2-2404(B)

1           **a. Residential Programs**

2                   **i. Consumer Products Program**

3           Current Program

4           11.    The current program consists of two measures: United States Environmental  
5 Protection Agency (“EPA”)/Department of Energy (“DOE”) ENERGY STAR® approved high-  
6 efficiency lighting and dual and variable speed pool pumps with energy efficient motors.

7           12.    For the lighting measure, APS solicits discount pricing from CFL manufacturers  
8 and distribution of CFLs through local retailers. The discounted pricing is passed on to consumers  
9 through a negotiated agreement with lighting manufacturers and retailers.

10          13.    The efficient pool pump measure provides incentives to consumers, retailers and  
11 installers to help overcome the higher initial cost of dual speed and variable speed pool pumps  
12 with efficient motors and to increase adoption in the marketplace. An instant rebate is also  
13 available for a new type of smart digital pool pump timer which provides savings by automatically  
14 adjusting pool pump run times.

15          Proposed Changes

16          14.    There are two major changes to APS’ Consumer Products Program, both compelled  
17 by recent legislation.

18          15.    First, Section 321 of the Energy Independence and Security Act (“EISA”), passed  
19 in 2007, mandates improved efficiency for light bulbs. Light bulbs manufactured after January 1,  
20 2012, will need to meet the new efficiency levels, thereby creating a lower baseline level of energy  
21 use for “conventional” light bulbs. The EISA standards are being phased in over a three year time  
22 period: standards apply to 100 watt incandescent bulbs in 2012, 75 watt bulbs will be addressed in  
23 2013, and 60 watt bulbs will be addressed in 2014.

24          16.    Pursuant to Decision No. 72032 (December 10, 2010), APS has updated its savings  
25 analysis for 100 watt equivalent CFL using the updated baseline level of savings. An EISA  
26 compliant bulb will produce close to the equivalent light output of today's 100 watt incandescent  
27 bulbs, while using only 75 watts of energy. By comparison, a CFL uses only 23-26 watts

28          ...

1 (depending on the type of CFL bulb) to produce the same amount of light, so CFLs continue to be  
2 a significant savings measure when compared to EISA-compliant incandescent bulbs.

3 17. The second change to APS' Consumer Products Program results from the passage  
4 of Arizona legislation which requires pool pumps sold in Arizona after January 1, 2012 that are  
5 greater than or equal to one horsepower to have a minimum of two-speeds.<sup>3</sup> As such, dual speed  
6 pumps will be the baseline against which variable speed pump costs and energy use will be  
7 compared. The rebate previously available for dual-speed pumps will no longer be available. APS  
8 also believes that, once actual savings impacts from the pool pump legislation can be determined,  
9 it will meet the standard for claiming energy savings from building codes under A.A.C. R14-2-  
10 2404(E).

11 18. The improved pool pump and pool pump motor efficiency standards entitled  
12 "Appliances and Equipment Energy Efficiency Standards" are set forth in Title 44, Article 19 of  
13 the Arizona Revised Statutes. Staff believes that the improved standards for residential pool  
14 pumps and pool pump motors are appliance and equipment standards, not building codes.

15 19. The Commission recognizes a distinction between appliance and equipment  
16 standards and building codes as evidenced by the inclusion of both categories in the Gas Utility  
17 Energy Efficiency Standards at A.A.C. R14-2-2504(E). This provision allows an affected utility to  
18 count up to one-third of the savings from improved energy efficiency building codes and up to  
19 one-third of the savings from improved energy efficiency appliance standards towards meeting the  
20 energy efficiency standard.

21 20. Because energy savings from improved energy efficiency appliance and equipment  
22 standards were not included within the EE Rules, and pool pumps and pool pump motors are  
23 considered appliances and equipment, Staff does not believe APS can claim energy savings from  
24 the pool pump legislation under A.A.C. R14-2-2404(E).

25 ...

26 ...

27

28 <sup>3</sup> A.R.S. § 44-1375.02(B)(2), 2011.

Proposed Budget

21. The proposed budget for the Consumer Products Program for 2012 is presented in the table below:

**2012 Proposed Consumer Products Program Budget**

Rebates and Incentives	\$ 4,716,250
Program Implementation	\$ 2,350,000
Program Marketing	\$ 850,000
Planning and Administration	\$ 475,000
Financing Subtotal	\$ -
Training and Technical Assistance	\$ 2,000
Consumer Education	\$ 2,000
<b>Total Program Cost</b>	<b>\$ 8,395,250</b>
Incentives as % of Total Budget	56%

Cost Effectiveness

22. Staff's review of the benefits and costs associated with the proposed changes to the measures in the Consumer Products Program found that all of the measures and the program, as a whole, are cost effective, meaning that the benefits outweigh the costs. Staff's benefit-cost analysis is presented in the table below.

**Cost Effectiveness of the Consumer Products Program**

Measure	Units	Present Value DSM Savings	Present Value DSM Costs	B/C
CFLs	2,600,000	\$21,300,224.67	\$6,883,525.59	3.09
Giveaway CFLs	235,000	\$2,097,106.07	\$758,812.08	2.76
Variable Speed Pool Pump	3,000	\$1,389,378.58	\$1,336,051.31	1.04
Pool Pump Timers	750	\$261,687.13	\$158,839.21	1.65
Program Total		\$25,048,396.45	\$9,137,228.19	2.74

Recommendations

23. The proposed changes to the Consumer Products Program are cost-effective. As such, Staff has recommended approval of the revised Consumer Products Program.

1           24.     It is Staff's expectation that, once APS has compiled 12 months of data regarding  
2 actual energy savings associated with pool pump timers, the Company will file a letter detailing  
3 the participation levels for this measure and whether or not the timer measure results in cost-  
4 effective energy savings. While Staff finds this measure cost-effective for the 2012 Plan, Staff has  
5 also recommended that timers cease to be included as a measure eligible for rebates unless savings  
6 from the timers can be verified by the Company.

7           25.     Staff does not recommend that APS be allowed to include savings impacts from the  
8 pool pump and pool pump motor legislation as energy savings from building codes under A.A.C.  
9 R14-2-2404(E) for reasons discussed above.

10                   **ii. Existing Homes Program**

11           Current Program

12           26.     APS' Existing Homes Program consists of two components: 1) Heating Ventilation  
13 and Air Conditioning ("HVAC") Program and 2) Home Performance with ENERGY STAR<sup>®</sup>  
14 ("HPwES") Program. In its 2012 Plan, APS is proposing to eliminate rebates for HVAC  
15 equipment in favor of Quality Installation rebates for the Residential HVAC component. The  
16 Company is also proposing a performance-based rebate structure for the HPwES component.

17           27.     The current HVAC Program offers rebates for high-efficiency HVAC equipment  
18 with Quality Installation, for Duct Test and Repair, and for HVAC Diagnostics.

19           28.     The current HPwES program utilizes certified contractors to perform a detailed  
20 checkup on a customer's home to diagnose energy inefficiencies. The HPwES checkup provides  
21 the customer with a comprehensive list of potential improvements that would make their home  
22 more energy efficient. The customer has the option of selecting the improvements, if any, which  
23 the contractor is also qualified to install.

24           29.     The cost of the checkup to the customer is \$99 and it includes ten CFLs, three  
25 faucet aerators and one low flow showerhead in addition to the evaluation and energy efficiency  
26 recommendations for the home. Of the customers who have received audits to date, approximately  
27 40 percent have installed at least one additional energy efficiency measure. It is also worth noting  
28 that customers participating in HPwES also gain access to APS' Residential Energy Efficiency



1 Financing (“REEF”). The REEF program offers customers financing for energy efficiency  
2 improvements at below market rates, further reducing the upfront cost barrier for whole house  
3 energy retrofits.

4 Proposed Changes

5 30. APS proposes to maximize the cost effectiveness of the Residential HVAC  
6 Program by changing from an equipment replacement (with Quality Installation) program to a  
7 Quality Installation only program. APS proposes to offer rebates of \$270 for Quality Installation of  
8 HVAC replacement equipment of all Seasonal Energy Efficiency Ratio (“SEER”) levels and  
9 Energy Efficiency Ratio (“EER”) of 10.8 or above.

10 31. According to APS, Quality Installation provides cost-effective savings regardless of  
11 the efficiency level of HVAC units. Recent program measurement and evaluation study results  
12 indicated that Quality Installation works well in the field and generates significant savings.

13 32. According to APS, a performance-based rebate would offer customers an  
14 alternative to the prescriptive approach, in which the incentive is based on the modeled estimated  
15 savings of the project. Under this incentive structure, customers would receive a greater reward  
16 for projects that achieve deeper energy savings. Typically, these projects are more expensive and  
17 include multiple envelope improvements combined with properly sized high efficiency HVAC  
18 equipment. However, when installed all at the same time the project cost is reduced and the  
19 contractor can more efficiently execute the combination of measures.

20 33. While many of the participating HPwES contractors are also participating in the  
21 APS Residential HVAC program, very few HVAC replacements are taking place as a part of the  
22 HPwES program.

23 34. APS believes a performance-based incentive would encourage customers to take  
24 advantage of more measures when undertaking whole-home retrofits by potentially providing a  
25 greater incentive commensurate with anticipated energy savings. APS anticipates that the  
26 performance-based incentive would increase both the overall number of homes that adopt  
27 measures and the number of measures adopted per home. This would allow participating

28 ...

1 customers to earn the higher incentives associated with the combined energy savings of HVAC  
2 and envelope measures.

3 35. Aside from the program incentives and slight changes to the delivery strategy  
4 described below, all other aspects of the Existing Homes Program remain the same, including the  
5 target market, program eligibility, and monitoring and evaluation.

6 Program Incentives

7 36. APS proposes to set the Residential HVAC rebate at \$270 and to eliminate the  
8 contractor incentive of \$50. The \$270 rebate would be paid directly to the customer.

9 37. The proposed incentive structure for the HPwES performance-based measures  
10 provides incentives based on tiers of modeled whole house energy savings calculated on dollars  
11 per first-year energy savings. The total incentive would be capped at 75 percent of incremental  
12 cost or \$3,000. APS' proposed incentive structure is shown in the table below. Customers  
13 receiving a performance-based incentive would not be eligible for any other incentives offered by  
14 APS that would apply to the measures being installed.

Percent of Whole House Energy Savings	Incentive (\$/kWh saved)	Total Incentive Cap
Tier 1: 10 – 15%	\$0.25	\$3,000
Tier 2: 15 – 20%	\$0.30	\$3,000
Tier 3: 20 – 30%	\$0.35	\$3,000
Tier 4: > 30%	\$0.40	\$3,000

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21 38. Customers that wish to take advantage of performance-based incentives may choose  
22 any combination of the listed measures APS proposes to include in the performance-based  
23 program, which are limited to:

- 24 • Duct sealing
- 25 • Air Sealing
- 26 • Insulation
- 27 • Shade Screens
- 28 • Pool Pumps
- Early Retirement HVAC with Quality Installation

1 Delivery Strategy and Administration

2 39. Similar to the current HPwES program, customers must undergo a \$99 home  
3 energy checkup performed by a participating APS HPwES contractor. As a part of this  
4 comprehensive evaluation, contractors are required to input the home data into energy modeling  
5 software provided by APS. This software models the estimated impact for each recommended  
6 measure, and provides the customers with accurate information on expected savings and payback  
7 periods.

8 40. The new performance-based rebate amount would be automatically estimated by  
9 the software and reported to the customer on their energy savings report. The final incentives  
10 would be paid based on the post installation results as verified during test out protocols. The  
11 software being used is EM Home™ produced by Conservation Services Group. This software has  
12 met all DOE testing standards, and APS continually evaluates the output of the software for  
13 accuracy and climate-specific variables.

14 Proposed Budget

15 41. The proposed budget for the Existing Homes Program for 2012 is presented in the  
16 table below:

17 **Proposed 2012 Existing Homes Budget**

18 Rebates and Incentives	\$7,565,347
19 Training and Technical Assistance	\$203,000
20 Consumer Education	\$175,000
21 Program Implementation	\$2,777,876
22 Program Marketing	\$720,000
23 Planning and Administration	\$622,500
24 Financing	\$255,000
<b>Total Program Cost</b>	<b>\$12,318,723</b>
Incentives as % of Total Budget	61%

25 Cost Effectiveness

26 42. Staff reviewed each measure within the Existing Homes Program to verify the cost-  
27 effectiveness of each measure and of the program as a whole. Measures in whole-house programs  
28 are evaluated without programs costs at the measure level because the incremental measure costs

1 for the suite of measures offered under these programs varies greatly. Including programs costs at  
 2 the measure level for whole-house programs can provide an inaccurate view of cost-effectiveness.  
 3 Program costs are included at the program level to ensure program cost effectiveness. Staff's  
 4 benefit-cost analysis is presented in the table below.

5 **Cost Effectiveness of the Proposed Existing Homes Program**

6 Measure	2012 Units	Present Value DSM Savings	Present Value DSM Costs	Benefit/Cost Ratio
7 Quality Installation	10,000	\$5,039,072.38	\$4,426,222.24	1.14
8 Duct Test & Repair	4,000	\$5,177,443.63	\$3,810,435.85	1.36
9 HVAC Diagnostics	6,000	\$1,314,431.09	\$1,312,557.46	1.00
10 <b>Residential HVAC Program TOTAL</b>		<b>\$11,530,950.11</b>	<b>\$9,549,215.56</b>	<b>1.21</b>
11 HPwES Audits	6,000	\$0.00	\$552,409.12	0.00
12 Duct Test & Repair	2,600	\$3,520,232.97	\$1,091,560.42	3.22
13 Air Sealing	500	\$500,244.07	\$278,994.50	1.79
14 Air Sealing & Attic Insulation	1,505	\$1,635,408.06	\$1,576,532.88	1.04
15 Direct Install - Shower Heads	3,600	\$273,374.17	\$174,092.57	1.57
16 Direct Install - Faucet Aerators	9,000	\$248,589.59	\$63,589.91	3.91
17 Direct Install - CFLs	48,000	\$431,588.54	\$73,442.90	5.88
18 Shade Screens	275	\$286,012.94	\$237,842.81	1.20
19 Performance-based Tier 1	90	\$144,970.31	\$90,927.90	1.59
20 Performance-based Tier 2	120	\$314,592.00	\$219,718.61	1.43
21 Performance-based Tier 3	40	\$115,635.76	\$104,123.70	1.11
22 Performance-based Tier 4	15	\$56,879.59	\$53,978.68	1.05
23 HPwES Program Costs			\$2,697,000	
24 <b>HPwES Program TOTAL</b>		<b>\$7,527,528.00</b>	<b>\$7,214,214.00</b>	<b>1.04</b>
25 <b>Existing Homes TOTAL</b>		<b>\$19,058,478.11</b>	<b>\$16,763,429.56</b>	<b>1.14</b>

23 Recommendations

24 43. Staff has recommended that APS' revised Residential HVAC program be approved.

25 44. Staff has recommended that APS' modified HPwES program be approved.

26 45. Staff has also recommended that the number of participants, energy savings,  
 27 coincident demand, measure life, actual expenses, etc. be reported separately for the Residential  
 28 HVAC and HPwES components of the Existing Homes Program in the Company's Annual DSM

1 Progress Report. Staff has further recommended that APS report the current HPwES measures  
2 separate from the HPwES performance-based tiers but include sufficient information within the  
3 tier-level reporting so Staff is aware of the measures being installed within each performance-  
4 based tier.

### 5 **iii. Residential New Construction Program**

#### 6 Current Program

7 46. The APS Residential New Construction program is based on the requirements of  
8 the EPA ENERGY STAR<sup>®</sup> Homes (“ESH”) program. Currently, APS provides builder incentives  
9 of \$400 per home to comply with ENERGY STAR<sup>®</sup> Version 2 guidelines and a higher incentive  
10 of \$1,000 per home for builders that meet higher savings levels of 30 percent compared to standard  
11 new construction. The higher tier efficiency standard is approximately double the 15 percent  
12 savings of the current ESH program.

#### 13 Proposed Changes

14 47. In 2012, the EPA will release Version 3 guidelines for the ESH program. As a  
15 result, ENERGY STAR<sup>®</sup> qualified homes under Version 3 will be approximately 15 percent more  
16 efficient than homes built under Version 2.<sup>4</sup> Due to the updated Version 3 guidelines, APS  
17 proposes to update the APS Residential New Construction program builder incentive structure to  
18 account for higher incremental costs that builders will incur to meet Version 3 requirements and  
19 achieve significantly higher savings per participating home.

20 48. As APS has consistently done in the past, the Company proposes to continue to  
21 include a higher “second tier” program savings level to encourage advanced builders to exceed the  
22 ENERGY STAR<sup>®</sup> requirements and achieve even higher savings levels. APS proposes that this  
23 level is set at a Home Energy Rating System (“HERS”) score of 60, which represents an average  
24 savings of over 6,500 kWh per year compared to a typical new home in Arizona.

25  
26 <sup>4</sup> Homes built to the new Version 3 guidelines will be at least 20% more energy efficient than homes built to the 2009  
27 International Energy Conservation Code (IECC). By contrast, homes built to the Version 2 guidelines are 15% more  
28 efficient than homes built to the 2006 IECC. The 2009 IECC incorporates a number of design changes including  
improvements to duct sealing and verification, duct insulation, window U-factors, and efficient lighting requirements,  
resulting in approximately 12 – 20% savings over the 2006 IECC. See R. Lucas, DOE, Analysis of 2009 International  
Energy Conservation Code Requirements for Residential Buildings in Mesa, Arizona (March 2011). Available at  
<http://www.mesaaz.gov/sustainability/pdf/MesaFINALResidentialReportMarch%202011.pdf>.

1           49. Unlike prior versions of ENERGY STAR<sup>®</sup>, there is no longer one single HERS  
2 score that can be associated with all Version 3 compliant homes. This is largely due to the new  
3 size adjustment factor (“SAF”), which requires larger homes to achieve lower HERS scores to  
4 qualify for ENERGY STAR<sup>®</sup>. In general, Version 3 compliant homes need to achieve HERS  
5 scores of approximately 68 to 72 or lower in order to qualify. In addition, they must meet a  
6 number of new prescriptive checklist requirements, discussed below, that provide additional  
7 energy savings which are not captured in the HERS score, but are reflected in the energy modeling  
8 of savings.

9           50. In addition to the transition to Version 3 guidelines, APS believes that in order to  
10 ensure that the stringent energy efficiency levels of the new program requirements are being met,  
11 program quality control is essential. This will require APS to acquire more data on the home  
12 inspection process from the independent home energy raters who certify homes ENERGY STAR<sup>®</sup>.  
13 This additional field data will require home energy raters to spend added time collecting and  
14 uploading data to APS. The data will help ensure program consistency and field compliance while  
15 saving APS staff time in data collection. Moreover, Version 3 requires home energy raters to  
16 complete four inspection checklists (compared to one checklist under Version 2).<sup>5</sup> In exchange,  
17 APS proposes to provide an incentive for home energy raters who provide this additional field  
18 data.

19 Primary Changes from Version 2 to Version 3

20           51. With Version 3, homes must meet baseline ENERGY STAR requirements, still  
21 using either a prescriptive or performance path. Both options are based on a set of specifications  
22 called the ENERGY STAR Reference Design. When the prescriptive path is used, the home is  
23 simply built according to the Reference Design specifications (similar to the Builder Option  
24

25 \_\_\_\_\_  
26 <sup>5</sup> Both the Performance and Prescriptive Paths of the Version 3 National Program Requirements require completion of  
27 four inspection checklists: Thermal Enclosure System Rater Checklist; HVAC System Quality Installation Rater  
28 Checklist; HVAC System Quality Installation Contractor Checklist; and Water Management System Builder  
Checklist. For more information see ENERGY STAR Qualified Homes, Version 3 (Rev. 04) Inspection Checklists for  
National Program Requirements, available at  
[http://www.energystar.gov/ia/partners/bldrs\\_lenders\\_raters/Bundled\\_Checklists\\_v68\\_2011-09-01\\_clean\\_fillable\\_508.pdf](http://www.energystar.gov/ia/partners/bldrs_lenders_raters/Bundled_Checklists_v68_2011-09-01_clean_fillable_508.pdf)

1 Package approach used in ENERGY STAR Version 2). No trade-offs are allowed when the  
2 prescriptive path is used.

3 52. In contrast, the Version 3 performance path has been significantly changed from the  
4 Version 2 approach. Using the Version 3 performance path, the home is modeled using the  
5 ENERGY STAR Reference Design specifications to establish an Initial HERS Index Target Score.  
6 For larger homes, an SAF is applied to the Initial Target Score when the home exceeds a defined  
7 'Benchmark Home Size,' based on the number of bedrooms. The builder then has the flexibility to  
8 select a custom set of energy-efficiency measures, provided the resulting HERS Score for the  
9 home meets or performs better than the HERS Index Target Score (size-adjusted, when  
10 appropriate) and all other requirements are met (e.g., minimum efficiency for windows, insulation  
11 levels).

12 53. In addition to the baseline requirements, there are new checklists, as mentioned  
13 previously, with detailed mandatory requirements for Thermal Enclosures, HVAC Quality  
14 Installation, and Water Management.<sup>6</sup>

#### 15 Program Eligibility

16 54. Consistent with previously approved versions of the ESH program, this program is  
17 available to builders of newly-constructed residential single family homes built in the APS service  
18 territory. However, EPA has stated that builders must complete the online ENERGY STAR  
19 Orientation Training to be eligible to build homes qualified under Version 3. Effective January 1,  
20 2011, new builders must take this training to become partners. Builders who joined prior to 2011  
21 must complete the training by December 31, 2011 to remain ENERGY STAR partners.<sup>7</sup> A list of  
22 builders currently participating in the EHS program may be found through APS' website,  
23 [www.aps.com](http://www.aps.com).<sup>8</sup> It is important to note that homes with permit dates beyond January 1, 2012 or

24 ...

25 \_\_\_\_\_  
26 <sup>6</sup> EPA ENERGY STAR® Homes, Version 3 Overview. Available at  
[http://www.energystar.gov/index.cfm?c=bldrs\\_lenders\\_raters.nh\\_benefits\\_utilities\\_1a](http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.nh_benefits_utilities_1a)

27 <sup>7</sup> EPA, Version 3 Training Requirements. Available at  
[http://www.energystar.gov/index.cfm?c=bldrs\\_lenders\\_raters.nh\\_v3\\_training\\_req](http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.nh_v3_training_req)

28 <sup>8</sup> The list of builders currently participating in the EHS program may be accessed at  
[http://www.aps.com/aps\\_services/residential/waystosave/ResWaystoSave\\_21.html](http://www.aps.com/aps_services/residential/waystosave/ResWaystoSave_21.html)

1 final inspection dates beyond July 1, 2012 must qualify under Version 3 of the guidelines in order  
2 to earn the ENERGY STAR<sup>®</sup> label.<sup>9</sup>

### 3 Program Rationale

4 55. It is much easier and more cost effective to work with builders to implement energy  
5 efficiency at the time of construction rather than attempt to retrofit efficiency after a home has  
6 been built. For many new home measures such as building envelope improvements, the benefits  
7 of energy-efficiency upgrades will be sustained for the life of the home to produce very cost-  
8 effective savings.

9 56. As code requirements have become more rigorous and builder practices have  
10 become more efficient, EPA has periodically modified the guidelines to ensure that qualified  
11 homes represent a meaningful improvement over non-labeled homes. As stated previously, a  
12 home built to Version 3 guidelines will be approximately 15 percent more efficient than homes  
13 built under Version 2 guidelines.

### 14 Program Incentives

15 57. The proposed APS Residential New Construction program incentive structure for  
16 2012 is as follows:

#### 17 Tier 1:

- 18 • Requirement = ENERGY STAR<sup>®</sup> Version 3 Compliance
- 19 • Builder Incentive = \$1,000 per home
- 20 • Home Energy Rater Incentive = \$50 per home (only paid when data are provided)

#### 21 Tier 2:

- 22 • Requirements = ENERGY STAR<sup>®</sup> Version 3 Compliance, HERS score  $\leq 60$
- 23 • Builder Incentive = \$1,500 per home
- 24 • Home Energy Rater Incentive = \$50 per home (only paid when data are provided)

### 25 Delivery Strategy and Administration

26 58. The Delivery Strategy and Administration of the ESH program will remain the  
27 same as it has in the past. In May, APS held a full day forum on Version 3 with participating  
28 program HERS raters to ensure that communications with builders about upcoming program

<sup>9</sup> EPA, Which Version of the Guidelines Should I Use?  
[http://www.energystar.gov/index.cfm?c=bldrs\\_lenders\\_raters.nh\\_version\\_guidelines\\_which](http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.nh_version_guidelines_which)



1 changes were done in a coordinated and consistent manner. APS and raters discussed aspects of  
 2 the Version 3 specifications that pertain specifically to the Arizona market and climate with  
 3 emphasis on how to manage the requirements for mechanical, supply-side ventilation.

4 59. In order to maintain consistency with the EPA's timeline for launching Version 3, a  
 5 formal letter to participating builders was issued informing them of upcoming changes in program  
 6 requirements beginning January 1, 2012. APS is working with Advanced Energy to revise APS'  
 7 existing training manuals and materials for the "Success with ENERGY STAR<sup>®</sup>" builder  
 8 workshops to more closely align with the new Version 3 specification changes.

9 Proposed Budget

10 60. The proposed budget for the Residential New Construction Program for 2012 is  
 11 presented in the table below:

12 **Proposed 2012 Residential New Construction Budget**

13 Rebates and Incentives	\$ 2,225,000
14 Training and Technical Assistance	\$ 120,000
15 Consumer Education Program	\$ 15,000
16 Implementation	\$ 295,000
17 Program Marketing	\$ 550,000
18 Planning and Administration	\$ 403,000
19 Financing	\$ -
<b>Total Program Cost</b>	<b>\$ 3,608,000</b>
20 Incentives as % of Total Budget	62%

22 Cost Effectiveness

23 61. Staff's review of the benefits and costs associated with ENERGY STAR<sup>®</sup> for  
 24 Homes Version 3 found that all of the measures and the program, as a whole, are cost effective,  
 25 meaning that the benefits outweigh the costs. Staff's benefit-cost analysis is presented in the table  
 26 below.

27 ...

28 ...

**Cost Effectiveness of the Proposed Residential New Construction Program**

Measure	2012 Units	Present Value DSM Savings	Present Value DSM Costs	Benefit/Cost Ratio
ENERGY STAR 3 (HERS 70)	1,750	\$10,434,362	\$7,662,950	1.36
ENERGY STAR Tier 2 (Insulation at Roof Deck)	250	\$1,730,890	\$1,243,292	1.39
Total		\$12,165,252	\$8,906,243	1.37

Recommendations

62. The proposed changes to the APS' Residential New Construction Program are cost-effective and continue to encourage increased energy savings in new homes. As such, Staff has recommended approval of APS' proposed changes to the Residential New Construction Program.

**iv. Multifamily Energy Efficiency Program**Current Program

63. The Multifamily Energy Efficiency Program ("MEEP") targets multifamily properties and dormitories with EE measures and solutions designed to promote energy savings.

64. The MEEP takes a two track approach to address the challenges of reaching the multifamily market:

- Energy efficient CFL light bulbs, showerheads, and faucet aerators to retrofit each dwelling unit in an existing community, at no cost to that community; energy assessments to assist communities in identifying additional energy saving opportunities and available APS rebates.
- Builder incentives for new construction or major renovation projects that meet or exceed energy efficiency guidelines outlined in one of four Builder Option Packages ("BOP") which utilize a prescriptive list of measures.

Proposed Changes

65. APS proposes to add more flexibility to the MEEP BOPs in its 2012 Plan by restructuring the delivery of the prescriptive component and adding a performance component.

66. For the prescriptive path, APS proposes to modify the BOPS to mirror the ENERGY STAR® Qualified Homes National Attached Home Builder Option Package ("ENERGY

1 STAR<sup>®</sup> BOP”).<sup>10</sup> Under the ENERGY STAR<sup>®</sup> BOP, requirements are met by completing all  
 2 mandatory measures plus a specific number of optional measures. BOP 1 requires all mandatory  
 3 measures plus one from the optional section. BOPs 2 and 3 also require all mandatory measures  
 4 plus two and three measures from the optional section, respectively. The ENERGY STAR<sup>®</sup> BOP  
 5 may be found in Table 4 of the application at page 13.

6 67. For the performance path, APS proposes to allow builders to utilize HERS scores to  
 7 test and rate building performance. If a builder is unable to meet the requirements outlined in the  
 8 prescriptive path, a builder may earn the BOP incentive by building the facility using any desired  
 9 combination of measures as long as the building’s performance does not rate below the minimum  
 10 acceptable score. These projects will require performance testing by a certified HERS rater. The  
 11 minimum HERS index score for each BOP is presented in the table below.

12 **Proposed MEEP New Construction Performance Standards**

Builder Option Package	HERS Score
BOP 1	81
BOP 2	78
BOP 3	75
BOP Major Renovation	79

16  
 17 68. The target market, program eligibility, program rationale, delivery and  
 18 administration have not changed for the MEEP.

19 Program Incentives

20 69. The current incentives for the MEEP were approved in Decision No. 72060  
 21 (January 6, 2011).<sup>11</sup> The current incentives, presented in the table below, apply to both the  
 22 prescriptive and performance-based BOPs.

23 ...

24 ...

25 ...

26  
 27 <sup>10</sup> Note that APS’s program mirrors the ENERGY STAR<sup>®</sup> Qualified Homes National Attached Home Builder Option  
 28 Package. While MEEP participants can pursue the ENERGY STAR<sup>®</sup> designation on their own if they wish,  
 participation in the MEEP program alone will not earn them the ENERGY STAR<sup>®</sup> designation.

<sup>11</sup> Decision No. 72060 (January 6, 2011), Docket No. E-01345A-10-0219

**Incentives for MEEP**

<b>Builder Option Package</b>	<b>Incentive (per dwelling unit)</b>
BOP 1	\$650
BOP 2	\$800
BOP 3	\$900
BOP Major Renovation	\$650

70. In addition to the current incentives offered to builders in the MEEP, APS proposes to offer a design incentive to multifamily project developers. APS considers multifamily buildings commercial facilities if they are master metered and residential if the units are individually metered. The primary objective of the new construction program is to encourage builders and developers to emphasize energy efficiency in their construction practices. This will often require energy studies to estimate building performance when varying combinations of measures are incorporated in the building's design.

71. APS proposes to offer a design incentive to project developers of 50 percent of study costs up to \$5,000 for the multifamily market. If the participant qualifies as a commercial facility, the \$5,000 incentive will be paid out of the Solutions for Business program budgets. If the facility qualifies as a residential facility, the \$5,000 incentive will be paid out of the MEEP program budget.

72. All projects that receive a design incentive will be tracked to determine the degree to which the energy study influenced decisions to install energy saving measures. Specifically, a comparison of the project's design before the energy study and the design actually constructed will be made to estimate the influence the energy study had in decisions to build to a higher standard. If a construction standard is adopted that is more efficient than the one initially proposed, the incremental kWh savings between the two BOPs is attributed to the design incentive's influence.

**Proposed Budget**

73. The proposed 2012 budget for the MEEP is presented in the table below.

...

...

...

**Proposed 2012 MEEP Budget**

Rebates and Incentives	\$822,500
Training and Technical Assistance	\$5,000
Consumer Education	\$15,000
Program Implementation	\$807,750
Program Marketing	\$45,000
Planning and Administration	\$163,000
Financing	\$0
<b>Total Program Cost</b>	<b>\$1,858,250</b>
Incentives as % of Total Budget	44%

Cost Effectiveness

74. Staff evaluated the cost effectiveness of the MEEP in two separate components given that the Direct Install measures (showerheads, faucet aerators, and CFLs) are provided independent of the BOPs. Furthermore, the four categories of BOPs were evaluated together because, without MER information about actual implementation, it is difficult to determine which optional measures will be installed and, subsequently, what are the energy savings associated with those measures. Staff's review of the benefits and costs associated with the MEEP has found that both the Direct Install and BOP measures are cost-effective, meaning that the benefits of the measures outweigh the costs. Additionally, Staff included the new Design Incentive in the overall MEEP program-level cost-benefit analysis and found that the MEEP program, as a whole, is cost-effective as presented in the table below.

**Cost Effectiveness of the Proposed MEEP**

Measure	2012 Units	Present Value DSM Savings	Present Value DSM Costs	Benefit/Cost Ratio
Direct Install Measures	82,500	\$2,157,245	\$1,467,909	1.47
Builder Option Packages	240	\$347,841	\$330,560	1.05
Design Assistance – Incentive Only	5	\$0.00	\$23,250	0.00
MEEP Total		\$2,505,086	\$1,821,719	1.38

...

1 Recommendations

2 75. The proposed changes to APS' MEEP are cost-effective and help to overcome the  
3 barriers associated with increasing energy efficiency in multifamily housing. As such, Staff has  
4 recommended approval of APS' proposed changes to the MEEP.

5 76. Staff has also recommended that APS track and report in the Company's Annual  
6 DSM Progress Report the number of direct install measures installed by individual measures  
7 (showerheads, faucets, and CFLs) and the number and type of optional measures that  
8 builders/developers are choosing to install under the BOPs along with the energy savings,  
9 coincident demand savings, and actual costs for each measure.

10 **b. Non-Residential Programs**

11 Current Program

12 77. The five current Non-Residential energy efficiency programs, consisting of the  
13 Large Existing Facilities Program, the New Construction Program, the Small Business Program,  
14 the Schools Program, and the Energy Information Services Program, are marketed under the APS  
15 Solutions for Business program name.

16 Proposed Changes

17 78. In its 2012 Plan, APS is proposing to add new prescriptive measures in the area of  
18 Energy Management Systems ("EMS") and light emitting diode ("LED") lighting to all of the  
19 current Non-Residential Programs except the Energy Information Services Program to which these  
20 measures are inapplicable.

21 **i. Energy Management Systems**

22 79. EMS can help save electricity by providing a centralized control of HVAC systems  
23 and lighting circuits. In the past, APS customers installing EMS were eligible to receive APS  
24 Solutions for Business incentives through the custom measures available within the program. APS  
25 proposes to offer EMS as prescriptive measures in order to offer a more streamlined incentive  
26 application process for its customers and trade allies. Additionally, APS believes that the EMS  
27 prescriptive measures help promote and market the technology as an approved energy efficiency

28 ...

1 mechanism that will ultimately increase customer participation. The program incentives for the  
2 EMS measures are detailed in the table below.

3 **Proposed EMS Incentives**

	HVAC Control Pneumatic Baseline	HVAC Control Digital Baseline	Lighting Control
4 Saving versus Standard	21%	16%	25%
5 Customer Incentive	\$0.35/sq. ft.	\$0.25/sq. ft.	\$0.10/sq. ft.
6 Customer Payback	4.5 years	4.6 years	2.5 years

7  
8 **ii. LED Lighting**

9 80. In the past, the APS Solutions for Business program provided incentives for LED  
10 exit signs and green and red traffic signal lights. In its 2012 Plan, APS proposes to add a number  
11 of additional LED technologies to the Solutions for Business schedule of prescriptive incentives:

- 12 • Pedestrian Crossing Lights;
- 13 • LED Replacement of Incandescent Bulbs;
- 14 • LED Replacement of Multifaceted reflector ("MR")-16 Halogen Lamps  
15 (typically used in jewelry and retail display cases and accent lighting  
16 applications); and
- 17 • Refrigeration Case Strip Lighting.

18 81. The program incentives for the LED Lighting measures are detailed in the table  
19 below.

20 **Proposed LED Lighting Incentives**

	Pedestrian Crossing	Incandescent Replacement		MR-16 Replacement	Refrigeration Strip Lighting	
		W/O Reflector	With Reflector		W/O Motion Sensor	With Motion Sensor
21 Saving versus 22 Standard	93%	85%	80%	87%	70%	79%
23 Customer Incentive	\$25/signal	\$10/lamp	\$15/lamp	\$10/lamp	\$25/lamp	\$30/lamp
24 Customer Payback	3.9 years	0.8 years	1.4 years	2.4 years	3.1 years	2.8 years

25 ...

26 ...

Proposed Budget

82. The proposed 2012 budget for APS' Non-Residential Programs, which includes both existing and proposed measures, is presented in the table below.

**Proposed 2012 Non-Residential Budget**

	<b>Large Existing Facilities</b>	<b>New Construction</b>	<b>Small Business</b>	<b>Schools</b>	<b>EIS</b>	<b>Non-Residential Total</b>
Rebates and Incentives	\$11,802,541	\$2,064,670	\$3,354,843	\$2,293,823	\$29,094	\$19,544,971
Training and Technical Assistance	\$485,000	\$122,000	\$111,000	\$120,000	\$10,000	\$848,000
Consumer Education	\$134,000	\$33,000	\$23,000	\$25,000	\$5,000	\$220,000
Program Implementation	\$4,195,000	\$902,000	\$744,000	\$842,000	\$20,000	\$6,703,000
Program Marketing	\$1,017,000	\$203,000	\$229,000	\$246,000	\$10,000	\$1,705,000
Planning and Administration	\$420,000	\$173,000	\$182,000	\$87,000	\$4,000	\$866,000
Financing	\$70,000	\$0	\$10,000	\$0	\$0	\$80,000
<b>Program Total Cost</b>	<b>\$18,123,541</b>	<b>\$3,497,670</b>	<b>\$4,653,843</b>	<b>\$3,613,823</b>	<b>\$78,094</b>	<b>\$29,966,971</b>
Incentives as % of Total Budget	65%	59%	72%	63%	37%	65%

Cost Effectiveness

83. Staff evaluated the cost effectiveness of the proposed EMS and LED measures as separate components because, at this point in time, it is difficult to determine which measure(s) from each component might suit various categories of non-residential customers. Staff's review of the benefits and costs associated with the EMS and LED found all of the proposed measures to be cost effective as presented in the table below.

...

...

...



**Cost Effectiveness of EMS and LED Measures**

Measure	2012 Units	Present Value DSM Savings	Present Value DSM Costs	Benefit/Cost Ratio
<b><i>EMS Measures</i></b>				
Replace/Install Pneumatic Controls	500,000	\$812,759.85	\$803,623.83	1.01
Replacing Digital Controls	500,000	\$650,207.88	\$657,192.71	0.99
Replacing Lighting Controls	100,000	\$51,497.79	\$43,397.63	1.19
<b><i>LED Measures</i></b>				
Pedestrian Signs	500	\$117,788.32	\$108,344.93	1.09
Incandescent without Reflector	3,000	\$344,792.26	\$115,294.43	2.99
Incandescent with Reflector	3,000	\$318,442.67	\$158,718.43	2.01
MR-16 Replacement	1,000	\$124,335.16	\$52,153.90	2.38
Refrigeration Strip Lighting without Motion Sensor	1,700	\$510,175.72	\$230,779.99	2.21
Refrigeration Strip Lighting with Motion Sensor	1,325	\$423,885.08	\$185,730.96	2.28

**Recommendations**

84. The proposed EMS and LED measures are cost-effective additions to APS' Non-Residential Program offerings, and Staff has recommended approval of these measures.

85. Staff has recommended that APS report in its Annual DSM Progress Report the number of measures installed, the annual energy and capacity savings, and the measure life for the EMS and LED measures on an individual measure basis. This will enable the Company and Staff to clearly identify those measures preferred by customers and the individual energy savings characteristics associated with these new measures.

**III. New Energy Efficiency Initiatives****a. Codes & Standards Support Project****Program Objective and Description**

86. According to A.A.C. R14-2-2404(E), "An affected utility may count toward meeting the standard up to one third of the energy savings, resulting from energy efficiency building codes, that are quantified and reported through a measurement and evaluation study undertaken by the affected utility."

...

1           87.    The objective of the Energy Codes & Standards Support Project (“ECSSP”) is to  
2 increase energy savings in new construction and renovated buildings in both the residential and  
3 commercial sectors through efforts to: 1) improve levels of compliance with existing building  
4 energy codes & standards; and 2) support and inform periodic energy code & standards updates as  
5 warranted by changing market conditions. Specific ECSSP activities will depend on the market  
6 needs expressed by local code officials and, according to APS, are likely to include a combination  
7 of efforts to:

- 8           • Better prepare code officials and building professionals to adhere to existing  
9 standards;
- 10          • Provide data and market insight to document the specific local benefits of code  
11 & standards enforcement, and inform energy code changes over time;
- 12          • Ensure utility incentive programs align well with local energy codes &  
13 standards;
- 14          • Provide codes & standards training to Non-Residential Trade Allies as part of  
15 the Solutions for Business training series;
- 16          • Collaborate with relevant stakeholders to build a more robust community  
17 working to advance strong and effective building energy codes and standards  
18 across the local jurisdictions within APS’ service territory; and
- 19          • Advocate for energy code and standards updates over time.

#### 20 Delivery Strategy and Administration

21           88.    According to APS, delivery activities might include: participation in energy code  
22 adoption committees; technical support (calculations, research, and information) to code adoption  
23 committees; public testimony in support of code and standards adoption before city councils;  
24 ensuring that ongoing DSM programs align well with energy code and standards requirements; and  
25 funding for local code agencies to enforce and improve energy code and standards over time.

26           89.    Outreach and education strategy will likely include website promotion and direct  
27 outreach to local code officials and networks of municipal leaders who are members of committees  
28 conducting activities related to building code & standards enhancement.

...

1 Monitoring and Evaluation Plan

2 90. All evaluation activities will be conducted by Navigant Consulting, APS' MER  
3 contractor. The overall goal of the impact evaluation will be to develop methodologies for  
4 estimating savings from more stringent code and standards adoption and increased code and  
5 standards compliance rates in both the residential and commercial sectors. Process related  
6 evaluation activities will review utility code promotion implementation strategies and seek to  
7 identify ways to improve program delivery and market adoption of more aggressive residential and  
8 commercial codes.

9 Proposed Budget

10 91. APS is proposing an overall budget of \$ 100,000 in 2012, for the ECSSP that will  
11 be allocated on an as needed basis, between the Residential and Non-Residential programs.

12 Recommendations

13 92. Under A.A.C. R14-2-2404(E), APS may count up to one-third of the energy savings  
14 resulting from improved energy efficiency building codes toward meeting the Energy Efficiency  
15 Standard. The ECSSP appears to be a first step toward determining what level of participation  
16 APS may have in the code adoption process and what the potential for savings from such codes  
17 could be. Staff has recommended approval of the ECSSP.

18 93. The EE Rules are interpreted to include energy savings from improved appliance  
19 efficiency standards as well.

20 94. Staff has also recommended that MER information for the EBCSP be included in  
21 APS' Annual DSM Progress Report.

22 **b. Renewable Energy and Energy Efficiency Integration Pilot Program**

23 95. In Decision No. 72060 (January 6, 2011), APS was ordered to develop an integrated  
24 renewable energy and energy efficiency pilot program, focused on a bounded territory, building on  
25 the Company's Community Power Project and integrating energy efficiency programs.

26 96. During the site selection process, APS identified a bounded area where several  
27 utility smart grid technologies were planned for deployment in the North Phoenix area. This same  
28

1 site meets the criteria for the EE/RE Pilot and also offers the opportunity to complement these  
2 projects with smart grid technology.

3 97. APS' pilot program consists of offering:

- 4 • public EE/RE demonstration events;
- 5 • an enhanced energy audit (offered to 1,000 customers) to provide customers  
6 with cost and payback data to aid them in making energy upgrade decisions;
- 7 • a personal Energy Advisor to help customers choose the most beneficial energy  
8 upgrades for their individual homes;
- 9 • incentives (offered to 100 customers) for installing grid-tied photovoltaic  
10 ("PV") with an APS smart inverter; and
- 11 • a suite of Smart Home technologies.

12 98. At this point in time, Staff does not believe that APS has presented a concrete  
13 program that fully integrates energy efficiency and renewable energy measures such that  
14 customers are presented with a combined product. While an enhanced energy audit and the use of  
15 an Energy Advisor may help customers in the decision-making process, customers would simply  
16 choose renewable energy and energy efficiency options offered through other APS programs. The  
17 pilot, as presented, does not offer a product that reliably integrates renewable energy and energy  
18 efficiency measures such that customers would consistently benefit from both renewable energy  
19 and energy efficiency technologies simply by participating in the program.

20 99. Moreover, APS has not included in its proposal a number of elements that the  
21 Company is required to provide under A.A.C. R14-2-2407 when requesting Commission approval  
22 of a new program or measure. While Staff is aware that this program is being proposed as a pilot,  
23 the Company has failed to include an estimate of the baseline; the estimated societal benefits and  
24 savings from the proposed program; the estimated societal costs of the program, the estimated  
25 environmental benefits to be derived from the program and the estimated benefit-cost ratio of the  
26 program – all of which are important criteria considered by Staff when evaluating DSM programs.

27 100. Staff does not recommend approval of the Renewable Energy and Energy  
28 Efficiency Integration Pilot Program at this time.

1                   **c. Reporting Requirements**

2           101. According to A.A.C. R14-2-2409(D), an affected utility may request within its  
3 implementation plan that the reporting requirements prescribed in A.A.C. R14-2-2409 supersede  
4 specific existing DSM reporting requirements. APS is subject to a number of different reporting  
5 requirements imposed by other rules or Commission decisions. To avoid multiple requirements  
6 for similar information and to eliminate inefficient reporting processes, APS requests:

- 7                   • clarification that the EE Rules requirement (A.A.C. R14-2-2409) supersedes  
8 similar requirements of A.A.C. R14-2-213, which requires APS to file an  
9 updated Energy Conservation Plan; and  
10                  • clarification that the EE Rules reporting requirements (A.A.C. R14-2-2409)  
11 supersede similar DSM semi-annual reporting requirements contained in other  
12 Commission Orders.<sup>12</sup>

12           102. The specific requirements that APS requests be superseded by the EE Rules  
13 reporting requirements are discussed individually:

14           Arizona Administrative Code R14-2-213

15           103. The purpose of A.A.C. R14-2-213 was formal Commission recognition of the need  
16 for conservation of energy resources. The energy conservation plans filed by utilities were  
17 designed to help customers reduce energy consumption and cost and encourage participation in  
18 energy conservation programs sponsored by other municipal, state, or federal government entities  
19 having such jurisdiction. Implementation plans filed under the EE Rules encourage participation  
20 in other programs because APS' portfolio of DSM programs is designed to work with, not compete  
21 against other available energy saving programs. APS' incentive structure is designed to take into  
22 account other rebates that may be available from other entities, such as federal or state tax credits.  
23 Additionally, APS works closely with local municipalities to coordinate with them in regard to  
24 ARRA funded projects and other offerings. Staff has recommended that APS' programs continue  
25 to encourage participation in other municipal, state, or federal government energy conservation  
26

27  
28 <sup>12</sup> See Decision Nos. 59601 (December 5, 1995); 67744 (April 7, 2005); 68648 (April 12, 2006); 70637 (December 11,  
2008); 71444 (December 23, 2009); 71866 (September 1, 2010); 72032 (December 10, 2010); 72060 (January 6,  
2011); 72088 (January 20, 2011).

1 programs and that the reporting requirements of A.A.C. R14-2-213 be superseded by A.A.C. R14-  
2 2-2409 and the reporting requirements included in the Commission's decision in this docket.

3 Decision No. 59601 (December 5, 1995)

4 104. In the Amended Agreement approved in Decision No. 59601, APS was ordered to  
5 "file detailed semi-annual reports with Staff and in Docket Control on all DSM and renewable  
6 activities, although confidential information need not be filed in Docket Control."<sup>13</sup> Staff has  
7 recommended that the reporting requirements from Decision No. 59601 be superseded by A.A.C.  
8 R14-2-2409 and the reporting requirements included in the Commission's Decision in this docket.

9 Decision No. 67744 (April 7, 2005)

10 105. The reporting requirements contained in the Settlement Agreement approved in  
11 Decision No. 67744 (April 7, 2005)<sup>14</sup> are very similar to the listed requirements of A.A.C. R14-2-  
12 2409(A). Staff has recommended that the reporting requirements from Decision No. 67744 be  
13 superseded by A.A.C. R14-2-2409 and the reporting requirements included in the Commission's  
14 Decision in this docket.

15 Decision No. 68648 (April 12, 2006)

16 106. In Decision No. 68468, the Commission approved Staff's recommendation that  
17 APS include a description of its DSM marketing activities for all Residential programs included in  
18 the Portfolio Plan and provide Staff with examples of marketing materials in its semi-annual  
19 reports filed with the Commission.<sup>15</sup>

20 107. The EE Rules do not require examples of marketing materials in the Company's  
21 Annual DSM Progress Report. Currently, the Company provides a list of community education  
22 and consumer outreach efforts and advertising and marketing activities. Staff finds this  
23 information useful and would like APS to continue providing this information in its Annual DSM  
24 Progress Report.

25 \_\_\_\_\_  
26 <sup>13</sup> Decision No. 59601, In the Matter of Arizona Public Service Company's Rate Reduction Agreement, Docket No. U-  
1345-95-491, Ordering Paragraph, page 10, lines 27-28; Exhibit 1, page 6, subparagraph f (December 5, 1995).

27 <sup>14</sup> Decision No. 67744, Attachment A, paragraph 52 (April 7, 2005).

28 <sup>15</sup> Decision No. 68648, In the Matter of Arizona Public Service Company for Approval of its Demand-Side  
Management Program Portfolio Plan and Related Programs, Docket No. E-01345A-050477, page 5, lines 7-8; page 4,  
lines 17-19 (April 12, 2006).

1           108. Staff has recommended that the reporting requirements of Decision No. 68468 be  
2 superseded by Staff's recommended reporting requirements in this Decision, specifically that APS  
3 provide a list of community education and consumer outreach efforts and advertising and  
4 marketing activities at the program level.

5 Decision No. 70637 (December 11, 2008)<sup>16</sup>

6           109. In Decision No. 70637, APS was ordered to continue tracking "DSM applications  
7 resulting from studies for which incentives have been paid..."<sup>17</sup> Staff's intent in recommending  
8 this requirement was to identify if a tendency exists toward APS customers being paid for studies  
9 for which no DSM measures resulted. APS continues to offer a number of incentives for design  
10 assistance and feasibility studies, including a proposed \$5,000 design assistance incentive for the  
11 MEEP. As long as APS continues to offer incentives for studies, Staff has recommended that APS  
12 report in its Annual DSM Progress Report on whether, and what type of, DSM measures are  
13 installed by customers subsequent to the receipt of study or design assistance incentives.

14           110. This Decision also required APS to include samples of marketing materials in its  
15 Semi-Annual DSM Progress Reports.<sup>18</sup> Staff has recommended that this reporting requirement be  
16 superseded by Staff's recommended reporting requirements in this Decision, specifically that APS  
17 continue to provide a list of community education and consumer outreach efforts and advertising  
18 and marketing activities at the program level.

19           111. Regarding reporting requirements, APS was ordered to "continue to report its MWh  
20 savings resulting from DSM measures installed during the reporting period in terms of 'lifetime'  
21 MWh savings over the expected life of the measures; and additionally, it shall report MWh savings  
22 ...

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24  
25 <sup>16</sup> Decision No. 70637, In the Matter of the Application of the Arizona Public Service Company for Approval of  
26 Modifications and Final Approval of its Non-Residential Demand-Side Management Programs, pp. 9-12 (December  
27 11, 2008).

28 <sup>17</sup> Decision No. 70637, In the Matter of the Application of the Arizona Public Service Company for Approval of  
Modifications and Final Approval of its Non-Residential Demand-Side Management Programs, p. 9, ll. 3-4.  
(December 11, 2008).

<sup>18</sup> Decision No. 70637, In the Matter of the Application of the Arizona Public Service Company for Approval of  
Modifications and Final Approval of its Non-Residential Demand-Side Management Programs, p. 10, ll. 20.5-23.5  
(December 11, 2008).

1 for the six-month reporting period; and it shall report both lifetime and reporting period MWh  
2 savings by program not only for the period, but year-to-date and DSM program-to-date.”<sup>19</sup>

3 112. Beyond requiring that an affected utility report “Savings realized in kW, kWh,  
4 therms, and BTUs, as appropriate,”<sup>20</sup> the EE Rules do not specify the period for which energy  
5 savings should be reported or the terms for such reporting. Staff has recommended that, in its  
6 Annual DSM Progress Report, APS report energy savings, as required by the EE Rules, for the  
7 previous calendar year and program-to-date, in terms of annual energy savings, lifetime energy  
8 savings over the expected life of the measure, and peak load MW savings, and that Staff’s  
9 recommended reporting requirement supersede this reporting requirement of Decision No. 70637.

10 113. It is Staff’s recommendation that the EE Rules requirement that an affected utility  
11 report “The costs incurred during the previous year, disaggregated by type of cost, such as  
12 administrative costs, rebates, and monitoring costs”<sup>21</sup> supersedes the requirement of Decision No.  
13 70637 that APS “add program spending by budget category”<sup>22</sup> to its DSM Progress Reports.  
14 However, Staff would clarify that the Annual DSM Progress Report along with the September 1  
15 status report are to include both cost (actual expenditures) and budget information in the  
16 disaggregated manner dictated by the EE Rules.

17 114. Decision No. 70637 called for reporting of “environmental savings in terms of  
18 Sulphur Oxide (SOx), Nitrogen Oxides (NOx), Carbon Dioxide (CO<sub>2</sub>), Particulate Matter (PM<sub>10</sub>),  
19 and Water (H<sub>2</sub>O)” with savings reported “both for measure lifetime savings from DSM measures  
20 installed during the reporting period and for savings during the six-month reporting period only;  
21 and that such savings shall be reported for the reporting period, year-to-date, and program-to-

22 ...

23 ...

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25 <sup>19</sup> Decision No. 70637, In the Matter of the Application of the Arizona Public Service Company for Approval of  
26 Modifications and Final Approval of its Non-Residential Demand-Side Management Programs, p. 11, ll. 14-17  
(December 11, 2008).

27 <sup>20</sup> A.A.C. R14-2-2409(A)(4)(f).

28 <sup>21</sup> A.A.C. R14-2-2409(A)(4)(d).

<sup>22</sup> Decision No. 70637, In the Matter of the Application of the Arizona Public Service Company for Approval of  
Modifications and Final Approval of its Non-Residential Demand-Side Management Programs, p. 11, ll. 18-20.  
(December 11, 2008).



1 date.”<sup>23</sup> The EE Rules require that “environmental benefits realized, including reduced emissions  
2 and water savings”<sup>24</sup> be reported in the Annual DSM Progress Report. Staff has recommended  
3 that this requirement be superseded by the EE Rules with the understanding that, at this time,  
4 “reduced emissions” includes reduced emissions of SO<sub>x</sub>, NO<sub>x</sub>, CO<sub>2</sub>, and PM<sub>10</sub>.

5 115. Decision No. 70637 ordered APS to “establish a separate reporting category in its  
6 DSM Semi-Annual Progress Report within each program section to which Direct Install activities  
7 including but not limited to: 1) active number of contractors and contractor identification, 2)  
8 number of Direct Install jobs completed, 3) dollar value of the Direct Install incentives paid to  
9 contractors, 4) dollar value of Direct Install jobs paid by the customer, 5) number of each Direct  
10 Install measure for which incentives were paid, 6) number of instances when incentives were  
11 reduced because of eligibility for incentives paid by other entities, 7) spending and savings  
12 numbers attributable to Direct Install for the period and year-to-date and program-to-date, 8)  
13 descriptions of the types of businesses participating in Direct Install with frequencies of  
14 participation for each type, and 9) an estimation of the reduced marketing or other program or  
15 administration costs compared to those that would have been expended if the measures were  
16 implemented through a non-Direct Install program.”<sup>25</sup> Given the prevalence of Direct Install  
17 measures throughout APS’ DSM portfolio and the level of specificity of this reporting  
18 requirement, which is quite substantial in comparison to the EE Rules, Staff has recommended that  
19 APS continue to report this information in its Annual DSM Progress Report with the exception  
20 that information reported need only be for the previous calendar and program-to-date.

21 Decision No. 71444 (December 23, 2009)

22 116. Decision No. 71444 required that APS “describe its [low-income] marketing and  
23 consumer education activities and provide copies of brochures and other marketing materials in the  
24 semi-annual report filed with the Commission, or any successive report ordered by the

25  
26 <sup>23</sup> Decision No. 70637, In the Matter of the Application of the Arizona Public Service Company for Approval of  
27 Modifications and Final Approval of its Non-Residential Demand-Side Management Programs, p. 11, ll. 21-25.  
(December 11, 2008).

28 <sup>24</sup> A.A.C. R14-2-2409(A)(4)(g).

<sup>25</sup> Decision No. 70637, In the Matter of the Application of the Arizona Public Service Company for Approval of  
Modifications and Final Approval of its Non-Residential Demand-Side Management Programs, p. 12, ll. 9-17.  
(December 11, 2008).

1 Commission”<sup>26</sup> Staff has recommended that this reporting requirement be superseded by Staff’s  
2 recommended reporting requirements in this Decision, specifically that APS continue to provide a  
3 list of community education and consumer outreach efforts and advertising and marketing  
4 activities at the program level.

5 117. APS was also ordered to “report on the Energy Wise program...” including the  
6 “number of customers participating, the level of spending for energy efficiency measures, the level  
7 of spending associated with non-energy-efficiency measures, the number of measures installed, by  
8 type of measure, and the estimated energy and environmental savings arising from this portfolio  
9 component, along with any other information necessary for the Commission to understand the  
10 progress and status of the program.”<sup>27</sup>

11 118. Much of the information required by Decision No. 71444 for the Energy Wise  
12 program has been superseded by the reporting requirements of the EE Rules. However, Staff has  
13 recommended that APS continue to include in its Annual DSM Progress Report the level of  
14 spending associated with non-energy efficiency measures in the Energy Wise program.

15 119. Staff has recommended that the reporting requirements for the Appliance Recycling  
16 program ordered in Decision No. 71444<sup>28</sup> be superseded by reporting requirements of the EE  
17 Rules. However, similar to the additional requirement for the Energy Wise program, Staff has  
18 recommended that APS continue to include in its Annual DSM Progress Report the level of  
19 spending associated with non-energy efficiency measures in the Appliance Recycling program.

20 120. Staff has recommended that the order that “APS address the Self Direction  
21 component in its Demand Side Management Semi-Annual Report filed with the Commission”<sup>29</sup> be  
22 superseded by the reporting requirements of the EE Rules.

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25 <sup>26</sup> Decision No. 71444, In the Matter of the Application of Arizona Public Service Company for Approval of its 2010  
Energy Efficiency Implementation Plan, Docket No. E-01345A-08-0172, p. 12, ll. 17-22. (December 23, 2009).

26 <sup>27</sup> Decision No. 71444, In the Matter of the Application of Arizona Public Service Company for Approval of its 2010  
Energy Efficiency Implementation Plan, Docket No. E-01345A-08-0172, p. 14, ll. 12-20. (December 23, 2009).

27 <sup>28</sup> Decision No. 71444, In the Matter of the Application of Arizona Public Service Company for Approval of its 2010  
Energy Efficiency Implementation Plan, Docket No. E-01345A-08-0172, p. 16, l. 24 – p. 17, l. 5. (December 23,  
2009).

28 <sup>29</sup> Decision No. 71444, In the Matter of the Application of Arizona Public Service Company for Approval of its 2010  
Energy Efficiency Implementation Plan, Docket No. E-01345A-08-0172, p. 20, ll. 17-21. (December 23, 2009).

1           21. While the elements required to be reported for Self Direction projects<sup>30</sup> are those  
2 required by A.A.C. R14-2-2409, Staff has recommended that Self Direction projects be reported  
3 separately from the Non-Residential Large Existing Facilities or New Construction DSM  
4 Programs. Staff has recommended that the actual reporting requirements be superseded by the EE  
5 Rules.

6 Decision No. 71866 (September 1, 2010)

7           22. Decision No. 71866 required APS to “report on the [Residential Energy Efficiency  
8 Financing (“REEF”)] program in its DSM semi-annual report filed with the Commission, or in any  
9 succeeding form of report ordered by the Commission. The information and data reported shall  
10 include the number and size of the loans, the number and size of the loans in default, the total  
11 amount found to be uncollectible, and any other information necessary for the Commission to  
12 understand the progress and status of the program, including any ongoing problems and their  
13 proposed solutions.”<sup>31</sup>

14           23. While the REEF may be its own program, subject to the reporting requirements of  
15 A.A.C. R14-2-2409, Staff has recommended that APS continue to report to the Commission the  
16 number and size of the loans, the number and size of the loans in default, the total amount found to  
17 be uncollectible, and any other information necessary for the Commission to understand the  
18 progress and status of the program. Staff has recommended that this reporting requirement be  
19 superseded by Staff’s recommended reporting requirements in this Decision.

20           24. A similar financing reporting requirement was imposed by Decision No. 71460  
21 (January 26, 2010). APS was ordered to report on the Non-Residential Customer Repayment  
22 Financing program including “the number and size of the loans, the number of borrowers in each  
23 classification (schools, small businesses or municipalities), the number and size of the loans in  
24 default, the total amount found to be uncollectible, and any other information necessary for the  
25

26 <sup>30</sup> Decision No. 71444, In the Matter of the Application of Arizona Public Service Company for Approval of its 2010  
27 Energy Efficiency Implementation Plan, Docket No. E-01345A-08-0172, p. 20, l. 22 – p. 21, l. 2. (December 23,  
2009).

28 <sup>31</sup> Decision No. 71866, In the Matter of Arizona Public Service Company for Approval of its 2010 Energy Efficiency  
Implementation Plan – Residential Repayment Financing Program, Docket No. E-01345A-08-0172, p. 12, ll. 17-22.  
(September 1, 2010).

1 Commission to understand the progress and status of the program. Any ongoing problems and  
2 their proposed solutions should also be reported.”<sup>32</sup> Staff has recommended that this reporting  
3 requirement be superseded by the EE Rules but, similar to the REEF, that APS continue to report  
4 to the Commission the number and size of the loans, the number of borrowers in each  
5 classification (schools, small businesses or municipalities), the number and size of the loans in  
6 default, the total amount found to be uncollectible, and any other information necessary for the  
7 Commission to understand the progress and status of the program.

8 Decision No. 72032 (December 10, 2010)

9 125. Decision No. 72032 ordered “that the status of all programs [Consumer Products,  
10 Appliance Recycling, Energy Wise] shall be reported in semi-annual reports, or in any succeeding  
11 form of report ordered by the Commission. Information reported shall include, but not be limited  
12 to, the types of information and data currently covered in the current semi-annual reports.”<sup>33</sup> Staff  
13 has recommended that this requirement be superseded by the EE Rules.

14 Decision No. 72060 (January 6, 2011)

15 126. Decision No. 72088 ordered APS to “include detailed information regarding the  
16 implementation budget for each program...including information on the program-specific costs  
17 included in the Implementation budget category for that program and, for each program, how  
18 much Implementation funding is retained by APS and how much is paid to outside contractors.”<sup>34</sup>  
19 Staff has recommended that this reporting requirement be superseded by the EE Rules but would  
20 clarify that information on the program-specific costs included in the Implementation budget  
21 category for that program and, for each program, how much Implementation funding is retained by  
22 APS and how much is paid to outside contractors shall continue to be reported in APS’ Annual  
23 DSM Progress Report.

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25 <sup>32</sup> Decision No. 71460, In the Matter of the Application of Arizona Public Service Company for Approval of its 2010  
Energy Efficiency Implementation Plan. Docket No. E-01345A-08-0172, p. 19, ll. 5-12 (January 26, 2010).

26 <sup>33</sup> Decision No. 72032, In the Matter of the Application of Arizona Public Service Company for Approval of the  
Company’s 2011 Demand Side Management Implementation Plan, Docket No. E-01345A-10-0219, p. 18, ll. 1-4.  
27 (December 10, 2010).

28 <sup>34</sup> Decision No. 72060, In the Matter of the Application of Arizona Public Service Company for Approval of the  
Company’s 2011 Demand Side Management Implementation Plan, Docket No. E-01345A-10-0219, p. 25, ll.1-5  
(January 6, 2011).

1 Decision No. 72088 (January 20, 2011)

2 127. In Decision No. 72088, APS was ordered to report on its Bid for Efficiency pilot  
3 measure including “detailed information on how savings from the Bid for Efficiency pilot measure  
4 are being verified.”<sup>35</sup>

5 128. APS was also ordered to report on “the status of the Nonresidential programs,  
6 including data on whether the new measures are cost-effective in practice”<sup>36</sup> and to include  
7 “information on: (i) the program-specific costs included in the Implementation category; (ii) how  
8 much Implementation funding is retained by Arizona Public Service Company; and (iii) how much  
9 Implementation funding is paid to outside contractors.”<sup>37</sup>

10 129. Staff has recommended that these reporting requirements be superseded by the EE  
11 Rules and Staff’s recommended reporting requirements in this Decision, specifically that, in its  
12 Annual DSM Progress Report, APS continue to report detailed information on how savings from  
13 the Bid for Efficiency pilot measure are verified and that all applicable programs include  
14 information on the program-specific costs included in the Implementation budget category for that  
15 program and, for each program, how much Implementation funding is retained by APS and how  
16 much is paid to outside contractors.

17 Recommendations

18 130. Staff has recommended that, in general, all of the reporting requirements discussed  
19 above be superseded by the EE Rules such that APS only be required to file an Annual DSM  
20 Progress Report on March 1 of each year, and a status report on September 1, in a Commission-  
21 established docket for that year, rather than filing separate reporting materials in the various  
22 dockets discussed above.

23 ...

24 \_\_\_\_\_  
25 <sup>35</sup> Decision No. 72088, In the Matter of the Application of Arizona Public Service Company for Approval of the  
Company’s 2011 Demand Side Management Implementation Plan, Docket No. E-01345A-10-0219, p. 18, ll.22-25  
(January 20, 2011).

26 <sup>36</sup> Decision No. 72088, In the Matter of the Application of Arizona Public Service Company for Approval of the  
Company’s 2011 Demand Side Management Implementation Plan, Docket No. E-01345A-10-0219, p. 19, ll. 18-20  
27 (January 20, 2011).

28 <sup>37</sup> Decision No. 72088, In the Matter of the Application of Arizona Public Service Company for Approval of the  
Company’s 2011 Demand Side Management Implementation Plan, Docket No. E-01345A-10-0219, p. 20, ll.1-5  
(January 20, 2011).

1           131. Beyond the reporting requirements of the EE Rules detailed in A.A.C. R14-2-2409,  
2 Staff also has recommended that APS include the following information in its Annual DSM  
3 Progress Reports:

- 4           • whether, and what type of, DSM measures are installed by customers  
5           subsequent to the receipt of study or design assistance incentives;
- 6           • a list of community education and consumer outreach efforts and advertising  
7           and marketing activities at the program level for each program;
- 8           • energy savings, as required by the EE Rules, for each measure for the previous  
9           calendar year and program-to-date, in terms of annual energy savings, lifetime  
10           energy savings over the expected life of the measure, and peak load MW  
11           savings;
- 12           • cost (actual expenditures) and budget information in the disaggregated manner  
13           dictated by the EE Rules;
- 14           • reduced emissions of SO<sub>x</sub>, NO<sub>x</sub>, CO<sub>2</sub>, and PM<sub>10</sub>;
- 15           • for Direct Install measures, the 1) active number of contractors and contractor  
16           identification, 2) number of Direct Install jobs completed, 3) dollar value of the  
17           Direct Install incentives paid to contractors, 4) dollar value of Direct Install  
18           jobs paid by the customer, 5) number of each Direct Install measure for which  
19           incentives were paid, 6) number of instances when incentives were reduced  
20           because of eligibility for incentives paid by other entities, 7) spending and  
21           savings numbers attributable to Direct Install for the previous calendar year and  
22           program-to-date, 8) descriptions of the types of businesses participating in  
23           Direct Install with frequencies of participation for each type, and 9) an  
24           estimation of the reduced marketing or other program or administration costs  
25           compared to those that would have been expended if the measures were  
26           implemented through a non-Direct Install program;
- 27           • the level of spending associated with non-energy efficiency measures in the  
28           Energy Wise program;
- the level of spending associated with non-energy efficiency measures in the  
          Appliance Recycling program;
- a separate section for Self Direction projects;
- the number and size of the loans, the number and size of the loans in default,  
          the total amount found to be uncollectible, and any other information necessary  
          for the Commission to understand the progress and status of the REEF program  
          and the Non-Residential Customer Repayment Financing program;

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- detailed information on how savings from the Bid for Efficiency pilot measure are verified; and
- an Implementation budget category for applicable programs and, for each applicable program, how much Implementation funding is retained by APS and how much is paid to outside contractors.

**d. Website Enhancement**

132. At the Open Meeting held on November 23, 2010, APS committed to provide additional program-related information on the aps.com website that would make it easier for customers and contractors to monitor the status of the programs and to obtain information about similar programs across utilities.

133. APS currently provides information about its DSM programs to customers on the aps.com website. Based on the discussion at the Commission, there was a desire to have information added to the program pages on the website to include: a description of the Arizona Energy Efficiency Standard and what APS is doing to meet the Standard; information on available federal and state tax credits for energy efficiency projects; the annual budget for energy efficiency programs; and the amount of money spent on these programs. APS plans to make this additional information available on the modified program web pages by the end of 2011 in conjunction with an ongoing effort to re-design the entire aps.com website.

**IV. Demand Response and Load Management Programs**

134. In its 2012 Plan, APS is seeking continued funding of the APS Peak Solutions® program, Home Energy Information Pilot (“HEI Pilot”) and marketing/measurement of Demand Response (“DR”) rates.

135. APS plans to meet 10 percent of the 2012 DSM Energy Efficiency Standard energy savings (kWh) with the following DR programs and rates: APS Peak Solutions®, Residential Super Peak rate, and Time of Use rates. For APS, 10 percent of the 2012 Energy Efficiency Standard

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...  
...

1 kWh savings amounts to 53,000 MWh.<sup>38</sup> The anticipated 2012 demand reductions are detailed in  
 2 the table below.

3 **Proposed 2012 Demand Reductions**

DR Program	MW Reduced
APS Peak Solutions	100
Super Peak Pricing	0.2
Time of Use Rates	109
<b>Total</b>	<b>209</b>

7  
 8 **a. Home Energy Information Pilot**

9 136. On March 3, 2011, in Decision No. 72214 (Docket No. E-01345A-10-0075), the  
 10 Commission approved APS' HEI Pilot. APS had expected that the HEI Pilot would be operational  
 11 sometime during the 2011 summer season. The HEI Pilot is planned to be conducted through two  
 12 summer seasons, and the related Schedule 16 was proposed to be available through at least  
 13 December 31, 2012. According to APS, the Company is most interested in evaluating the HEI  
 14 Pilot's effect on the summer peak demand. Because approval and implementation occurred later  
 15 than anticipated, the HEI Pilot was not implemented during the summer of 2011.

16 137. On November 4, 2011, APS filed a request for revision to the schedule for the HEI  
 17 Pilot, extending the availability of HEI Pilot until December 31, 2013. Because the HEI Pilot was  
 18 intended to be evaluated over two summer seasons, Staff has recommended granting APS' request  
 19 to extend the pilot period so that two summers of information may be captured, as proposed in the  
 20 original application and as approved by the Commission.

21 138. Staff has further recommended that the budget for the HEI Pilot be limited to the  
 22 budgets approved for the pilot program in Decision No. 72214 (March 3, 2011) and the  
 23 Commission's Decision in this docket on the 2012 Plan.

24 ...

25 ...

26 \_\_\_\_\_  
 27 <sup>38</sup> Substituting the 209 MW DR load reduction into the DR energy savings formula yields 915,420 MWh of potential  
 28 energy savings from DR programs and rates. Since the EE Rules cap the DR contribution at 10% of the energy savings  
 goal (10% of 533,000 MWh), 53,000 MWh will be attributed to the 2012 DSM energy savings in lieu of the higher  
 calculated value of 915,420 MWh.



1           **b. Conservation Behavioral Pilot**

2           139. Ratepayers, selected to participate in the Conservation Behavior Pilot, should have  
3 the ability to opt-out or withdraw from the program. Any notice of selection should also provide  
4 clear and obvious steps to undertake the opt-out process, in each program-related correspondence.

5           **c. Electric Vehicle Readiness Demonstration Project**

6           140. In its application, APS originally included the Electric Vehicle Readiness  
7 Demonstration Project (“ev-READY Project”) as a DR program. A revised version of the ev-  
8 READY Project was approved in Decision No. 72582 (September 15, 2011, Docket No.  
9 E-01345A-10-0123), but the program was not approved as a DSM program. APS filed notice with  
10 the Commission on October 20, 2011, that this program was to be removed from the Company’s  
11 2012 plan with corresponding reductions made to the DSMAC as discussed in Section V.

12 Budget

13           141. The proposed 2012 DR budget, adjusted to reflect the removal of the ev-READY  
14 Project, is presented in the table below.

15 **Proposed 2012 DR Budget**

DR Program	Budget
APS Peak Solutions	\$8,665,000
DR Marketing and MER of Rate Options	\$200,000
HEI Pilot Program	\$899,000
<b>Total</b>	<b>\$9,764,000</b>

19  
20 Recommendations

21           142. Staff has recommended approval of the proposed DR budget and of continuation of  
22 APS’ previously approved suite of DR programs.

23 **V. Budget**

24           **a. Energy Efficiency and Demand Response Budget**

25           143. Staff evaluated the budgets for each program and for the DSM portfolio. Individual  
26 program budgets are commensurate with levels of funding previously approved by the  
27 Commission. The total DSM portfolio budget is presented in Table 2 in Appendix A. The 2012  
28 Plan budget totals \$81,189,026.

1                   **b. Budget Shifting**

2           144. APS is requesting the ability to shift energy efficiency funds between the  
3 Residential and Non-Residential classes. To ensure that the approved balance of funding between  
4 the customer classes remains largely intact, APS is also proposing to limit the total amount that  
5 could be shifted between customer classes to 10 percent of that class's total annual budget. No  
6 budget funding will be shifted out of the Low Income or Schools programs.

7           145. The section of the EE Rules dealing with parity and equity, A.A.C. R14-2-2408(B),  
8 dictates that "An affected utility shall allocate DSM funds collected from residential customers and  
9 from non-residential customers proportionately to those customer classes to the extent  
10 practicable."

11           146. The Residential budget represents 54 percent of the total 2012 Plan budget, while  
12 the Non-Residential budget represents 46 percent of the total. This seems to be comparable to the  
13 split for actual expenditures in 2010, the most recent year for which information is available. In  
14 2010, APS allocated 52 percent of actual program expenditures to Residential programs, with the  
15 remaining 48 percent allocated to Non-Residential programs.

16           147. In 2010 APS collected about 42 percent of total DSMAC revenue from Residential  
17 customers with Non-Residential customers contributing the remaining 58 percent.

18           148. While the amounts collected from each customer class are not exactly the same as  
19 the amounts spent on programs for that customer class, the level of funding collected through the  
20 DSMAC is roughly commensurate with the program funding for each customer class. Staff does  
21 not recommend that APS be allowed to shift up to 10 percent of energy efficiency funds between  
22 the Residential and Non-Residential classes. Staff does, however, recommend that APS more  
23 closely track its expenditures and make an effort to more closely allocate funds to each customer  
24 class proportionate with the revenue collected from that customer class through the DSMAC.

25           149. APS has previously been approved for various budget-flexibility mechanisms.  
26 Decision No. 70637 (December 11, 2008) allowed APS to exceed any DSM program annual  
27 budget by up to 15 percent without prior Commission authorization. However, APS was ordered  
28 to notify the Commission whenever any DSM program annual budget is exceeded and to seek

1 Commission approval prior to exceeding any Commission-authorized annual budget for any DSM  
2 program by more than 15 percent.

3 150. Decision Nos. 68488 (February 23, 2006) and 68648 (April 12, 2006) allow APS to  
4 shift a maximum of 25 percent of budgeted funds from one program to another program in the  
5 same sector (Residential or Non-Residential) per calendar year with the exception that funds may  
6 not be shifted from Low Income or Schools programs.

7 151. In previous DSM filings, APS has indicated that flexibility is a key to implementing  
8 a successful program so that it can make adjustments to maximize the results of the DSM  
9 programs. At that time, Staff expressed concern that too much flexibility for new programs could  
10 result in loss of the Commission's ability to monitor and provide valuable input regarding certain  
11 aspects of the program while it is being developed and implemented. (Decision No. 68488). Staff  
12 understands the need for flexibility and agrees that it is necessary to maximize results of DSM  
13 programs, especially given the current state of the economy and its impact on APS customers.  
14 However, after implementing energy efficiency programs for quite some time, APS should be  
15 conscious of its programs, the levels of participation, and the changes it has observed in its  
16 programs over time.

17 152. Staff has recommended that APS continue to have various flexibility mechanisms at  
18 its disposal. Staff has recommended maintaining the flexibility to shift budgeted funds from one  
19 program to another program in the same sector (Residential or Non-Residential) per calendar year  
20 with the exception that funds may not be shifted from Low Income or Schools programs. Staff has  
21 also recommended that APS be allowed to exceed any DSM program annual budget by up to 5  
22 percent without prior Commission authorization, rather than the 15 percent approved in Decision  
23 No. 70637 (December 11, 2008). Staff does not recommend that APS be allowed to shift up to 10  
24 percent of energy efficiency funds between the Residential and Non-Residential classes. Staff  
25 does, however, recommend that APS more closely track its expenditures and make an effort to  
26 more closely allocate funds to each customer class proportionate with the revenue collected from  
27 that customer class through the DSMAC.

28 ...

1 **VI. Demand Side Management Adjustment Charge**

2 153. The DSMAC mechanism structure agreed to by the parties in the 2009 Settlement  
3 allows for more concurrent recovery of DSM program costs and incentives than was allowed  
4 previously. Because of the transition from a lagging DSMAC to a forward-looking DSMAC in  
5 2009, the old DSMAC recovered costs through 2008 and the new DSMAC began recovering 2010  
6 costs leaving 2009 costs unrecovered. Decision No. 71460 authorized APS to recover one-third of  
7 all unrecovered 2009 costs each year over the three years of 2010, 2011, and 2012 without interest.

8 154. Because 2012 will be the third of three transition years to the new forward-looking  
9 DSMAC, the DSMAC charges for 2012 will recover the projected costs for 2012 (less \$10 million  
10 recovered in base rates), the final third of 2009 costs, and the true-up of 2010 costs. There is no  
11 credit taken for gains on the sale of APS property this year.

12 155. Decision No. 71104 (June 5, 2009) authorized the projected costs from the  
13 approved Commercial and Industrial Customer Load Management DR program to also be  
14 recovered through the DSMAC beginning in 2010. In addition, the Company is requesting  
15 Commission approval for recovery of incremental costs for marketing, customer acquisition, and  
16 MER for DR rates, which includes time-of-use rates, through the DSMAC. Staff has  
17 recommended approval for recovery of incremental costs for marketing, customer acquisition, and  
18 MER for DR rates, which includes time-of-use rates, through the DSMAC and has included these  
19 costs in its DSMAC calculation.

20 156. APS will maintain the present 2011 DSMAC charges of \$0.002717 per kWh and  
21 \$0.9685 per kW in 2012 with a 2012 DSM Budget of \$77 million. APS shall not exceed its total  
22 DSM budget by more than 5 percent without Commission approval. Any spending that exceeds  
23 that 2012 budget will be trued up according to the Commission approved Demand Side  
24 Management Adjustment Charge Plan for Administration.

25 157. The table below summarizes the DSM program costs used by Staff to calculate  
26 APS' proposed 2012 DSMAC. With Commission approval, the 2012 DSMAC will be effective  
27 with billing cycle 1 of March 2012.

28 ...

1	<b>2012 DSM Budget</b>	
2	Energy Efficiency Program Costs	\$62,159,694
3	Codes & Standards	\$100,000
4	Measurement, Evaluation and Research	\$2,500,000
5	Performance Incentive	\$6,665,332
6	Demand Response Program Costs	\$9,764,000
7	<b>Total 2012 DSM Budget</b>	<b>\$81,189,026</b>
8	<b>2012 Revenue Requirement for DSMAC</b>	
9	Total 2012 DSM Budget	\$81,189,026
10	2009 Budget Carryover for 2012	\$4,875,000
11	Amount Recovered in Rate Base	(\$10,000,000)
12	Recovery of True-up Balance	\$429,000
13	<b>Total Revenue Requirement for DSMAC - 2012</b>	<b>\$76,493,026</b>

158. The true-up balance is the difference between actual expenses and actual revenue recovered through the DSMAC. The DSMAC for 2012 includes the true-up amount for 2010 DSM programs. The total true-up amount also includes a true-up for the performance incentive in which APS verifies (1) actual energy savings (kWh) (2) the present value of net benefits from DSM programs and (3) actual program costs. APS then determines whether the level of energy savings places the Company in the performance incentive tier for which it was approved and whether the amount of the performance incentive has changed based on actual program costs.

159. Staff has recommended that the calculations for the performance incentive portion of the annual true-up be presented in a separate section of the Annual DSM Progress Report. For example, in the Annual DSM Progress Report filed by the Company on March 1, 2012, which will provide information for programs implemented in January – December 2011, Staff has recommended inclusion of a separate section in the report which details how the performance incentive for 2011 programs was true-up. This portion of the true-up would then be included in the DSMAC for the 2013 DSM Implementation Plan.

## **VII. 2012 Plan Energy Savings, Benefits and Cost Effectiveness**

### **Energy Savings**

160. The total energy savings anticipated to result from proposed 2012 programs, as amended by Staff, is presented in the table below.

1 **Proposed 2012 Plan Energy Savings**

2	Program	2012 Units	Annual kWh Savings per unit	Total kWh Savings 2012
3	<b>Residential</b>			
4	<b>Residential Consumer Products</b>			
	CFLs	2,600,000	42	108,508,384
5	Giveaway CFLs	235,000	45	10,683,154
	Variable Speed Pool Pump - 2012	3,000	1434	4,301,599
6	Pool Pump Timers	750	1080	810,199
7	<b>Residential Existing Homes</b>			
8	<b>Residential HVAC</b>			
	Quality Installation	10,000	1020	10,197,753
9	Duct Test & Repair	4,000	1069	4,275,269
10	HVAC Diagnostics	6,000	710	4,259,385
	<b>Home Performance with Energy Star*</b>			
11	HPwES Audits	6,000	0	0
12	Duct Test & Repair	2,600	1039	2,702,577
	Air Sealing	500	1662	831,183
13	Air Sealing & Attic Insulation	1,505	1742	2,621,844
14	Direct Install - Shower Heads	3,600	238	857,828
15	Direct Install - Faucet Aerators	9,000	81	727,151
	Direct Install - CFLs	48,000	43	2,052,875
16	Shade Screens	275	1861	511,855
17	Performance-based Tier 1	90	2071	186,391
	Performance-based Tier 2	120	3179	381,494
18	Performance-based Tier 3	40	4732	189,264
19	Performance-based Tier 4	15	6657	99,855
20	<b>Residential New Construction</b>			
	ENERGY STAR 3 (HERS 70)	1,750	5328	9,323,698
21				
22	ENERGY STAR Tier 2 (Insulation at Roof Deck)	250	6520	1,629,907
	<b>Residential Multi-Family</b>			
23	Direct Install Measures	82,500	67	5,565,154
24	Builder Option Packages	240	2004	480,970
25	<b>Non-Residential Solutions for Business</b>			
	<b>Energy Management Systems</b>			
26	Replacing/Installing Pneumatic Controls	500,000	4	2,183,874
27	Replacing Digital Controls	500,000	3	1,747,099
	Replacing Lighting Controls	100,000	1	138,374
28	<b>LED</b>			

1	Pedestrian Signs	500	676	337,863
2	Incandescent without Reflector	3,000	251	751,613
3	Incandescent with Reflector	3,000	199	596,774
4	MR-16 Replacement	1,000	141	140,860
5	Refrigeration Strip Lighting without Motion Sensor	1,700	589	1,001,153
6	Refrigeration Strip Lighting with Motion Sensor	1,325	665	880,654
7	<b>Total</b>			178,976,052

### Cost Effectiveness

161. The cost effectiveness of the Company's proposed programs for 2012, as calculated by Staff, is presented in the table below. Staff has recommended that, in all future DSM Implementation Plans, the Company use the same input values and methodology as Staff for calculating the present value benefits and costs to determine benefit-cost ratios.

### **Proposed 2012 Plan Cost Effectiveness**

Program	2012 Units	Present Value Societal Benefits	Present Value Societal Costs	Benefit-Cost Ratio
<b>Residential</b>				
<b>Residential Consumer Products</b>				
CFLs	2,600,000	\$21,300,225	\$6,883,526	3.09
Giveaway CFLs	235,000	\$2,097,106	\$758,812	2.76
Variable Speed Pool Pump	3,000	\$1,389,379	\$1,336,051	1.04
Pool Pump Timers	750	\$261,687	\$158,317	1.65
<b>Residential Existing Homes</b>				
<b>Residential HVAC</b>				
Tier 1 - Equipment + QI	10,000	\$5,039,072	\$4,426,222	1.14
Duct Test & Repair	4,000	\$5,177,447	\$3,810,436	1.36
HVAC Diagnostics	6,000	\$1,314,431	\$1,312,557	1.00
<i>Res HVAC Program TOTAL</i>		\$11,530,950	\$9,549,216	1.21
<b>Home Performance with Energy Star*</b>				
HPwES Audits	6,000	\$0	\$552,409	0.00
Duct Test & Repair	2,600	\$3,520,233	\$1,091,560	3.22
Air Sealing	500	\$500,244	\$278,995	1.79
Air Sealing & Attic Insulation	1,505	\$1,635,408	\$1,576,533	1.04
Direct Install - Shower Heads	3,600	\$273,374	\$174,093	1.57
Direct Install - Faucet Aerators	9,000	\$248,590	\$63,590	3.91
Direct Install - CFLs	48,000	\$431,589	\$73,443	5.88
Shade Screens	275	\$286,013	\$237,843	1.20

1	Performance-based Tier 1	90	\$144,970	\$90,928	1.59
2	Performance-based Tier 2	120	\$314,592	\$219,719	1.43
3	Performance-based Tier 3	40	\$115,636	\$104,124	1.11
4	Performance-based Tier 4	15	\$56,880	\$53,979	1.05
4	HPwES Program Costs			\$2,697,000	
5	<i>HPwES Program TOTAL</i>		\$7,527,528	\$7,214,214	1.04
5	<b>Residential New Construction</b>				
6	ENERGY STAR 3 (HERS 70)	1,750	\$10,434,362	\$7,662,950	1.36
7	ENERGY STAR Tier 2 (Insulation at Roof Deck)	250	\$1,730,890	\$1,243,292	1.39
8	<b>Residential Multi-Family</b>				
9	Direct Install Measures	82,500	\$2,157,245	\$1,467,909	1.47
9	Builder Option Packages	240	\$347,841	\$330,560	1.05
10	<b>Non-Residential - Solutions for Business</b>				
11	<b>Energy Management Systems</b>				
12	Replacing/Installing Pneumatic Controls	500,000	\$812,760	\$803,624	1.01
13	Replacing Digital Controls	500,000	\$650,208	\$657,193	0.99
13	Replacing Lighting Controls	100,000	\$51,498	\$43,398	1.19
14	<b>LED</b>				
15	Pedestrian Signs	500	\$117,788	\$108,345	1.09
16	Incandescent without Reflector	3,000	\$344,792	\$115,294	2.99
16	Incandescent with Reflector	3,000	\$318,443	\$158,718	2.01
17	MR-16 Replacement	1,000	\$77,487	\$49,729	1.56
18	Refrigeration Strip Lighting without Motion Sensor	1,700	\$350,947	\$220,051	1.59
19	Refrigeration Strip Lighting with Motion Sensor	1,325	\$295,396	\$177,096	1.67
20	<b>Energy Efficiency Total</b>		\$61,796,531	\$38,938,297	1.59

\* Measures in whole-house programs are evaluated without programs costs at the measure level because the incremental cost for the suite of measures offered under these programs vary greatly. Program costs are included at the program level to ensure program cost effectiveness.

### Performance Incentive

162. The current tiered structure of APS' performance incentive is a product of the Settlement Agreement in APS' last rate case, approved in Decision No. 71448 (December 30, 2009). In 2012, the EE Rules require that APS achieve 1.75 percent savings of retail energy sales

...

...



1 from the prior year or cumulative (2011 and 2012) savings of 3.0 percent.<sup>39</sup> This goal results in  
 2 savings of 533,298 megawatt-hours (“MWh”) for 2012. APS’ 2012 Plan is designed to meet 100  
 3 percent of the energy efficiency standard for 2012, and the third performance incentive tier (96 -  
 4 105 percent) would be used to calculate the performance incentive.

5 163. The total energy savings from 2012 programs, including 10 percent of DR savings,  
 6 totals approximately 533,300 MWh. This level of savings represents 100 percent of the 2012  
 7 savings target.

8 164. Staff and the Company utilize different inputs and methodologies for calculating  
 9 net benefits (and cost effectiveness). Staff made its best effort to approximate the net benefits  
 10 resulting from all programs to be implemented in 2012.

11 165. Under the third performance incentive tier, the performance incentive is the lower  
 12 value of seven percent of net benefits resulting from 2012 programs or 14 percent of 2012 program  
 13 costs.<sup>40</sup> Although Staff’s net benefits calculation is slightly inaccurate, seven percent of the net  
 14 benefits is the lower value. Staff has recommended that APS’ performance incentive for 2012 be  
 15 \$6,665,332.

#### 16 **2012 Proposed Performance Incentive Calculation**

17 Achievement Relative 18 to the Energy 19 Efficiency Goals	Performance Incentive as % of Net Benefits	Performance Incentive Capped at % of Program Costs
20 <85%	0%	0%
85% to 95%	6%	12%
21 96% to 105%	7%	14%
22 106% to 115%	8%	16%
23 116% to 125%	9%	18%
24 >125%	10%	20%

27 <sup>39</sup> A.A.C. RI4-2-2404(B)

28 <sup>40</sup> Program costs include only the total program costs for residential and non-residential programs, MER costs and, for 2012, the costs for the ESCP.

Energy Savings (kWh)	533,343,939
Percent of Goal	100%

	Net Benefits	Program Costs
Incentive %	7%	14%
Program Plan	\$95,219,031	\$64,759,694
Calculated Incentive	\$6,665,332	\$9,066,357

Performance Incentive	\$6,665,332
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### VIII. 2012 Plan Environmental Benefits

166. The estimated environmental benefits associated with APS' 2012 Plan are presented in the table below.

#### **Proposed 2012 Environmental Benefits**

	Water (million gallons)	SO <sub>x</sub> (lbs)	NO <sub>x</sub> (lbs)	CO <sub>2</sub> (million lbs)	PM <sub>10</sub> (lbs)
<b>Residential</b>					
Consumer Products	243	3,410	64,788	689	18,927
Existing Homes	103	1,444	27,443	292	8,017
New Construction	69	975	18,523	197	5,411
Appliance Recycling	29	406	7,719	82	2,255
Low Income	11	156	2,957	31	864
Conservation Behavior	10	139	2,632	28	769
Multi-Family	17	232	4,407	47	1,287
Shade Trees	6	90	1,714	18	501
<b>Residential Totals</b>	<b>488</b>	<b>6,852</b>	<b>130,183</b>	<b>1,384</b>	<b>38,031</b>
<b>Non-Residential</b>					
Large Existing	649	9,104	172,985	1,839	50,535
New Construction	130	1,825	34,680	369	10,131
Small Business	165	2,318	44,033	468	12,863
Schools	147	2,063	39,205	417	11,453
EIS	3	44	844	9	247
<b>Non-Residential Totals</b>	<b>1,094</b>	<b>15,354</b>	<b>291,747</b>	<b>3,102</b>	<b>85,229</b>
<b>2012 Program Totals</b>	<b>1,582</b>	<b>22,207</b>	<b>421,930</b>	<b>4,486</b>	<b>123,261</b>

1 **IX. 2012 Plan Measurement, Evaluation, and Research**

2 167. The MER process verifies the impact and cost effectiveness of the EE programs.  
3 Navigant Consulting, an independent third-party, energy consulting company, provides the EE  
4 program measurement and evaluation services. These measurement and evaluation activities  
5 include, but are not limited to:

- 6 • Performing process evaluation to indicate how well programs are working to  
7 achieve objectives; and
- 8 • Performing impact evaluation to verify that EE measures are installed as  
9 expected; measuring of savings on installed projects to monitor the actual  
10 program savings that are achieved; and research activities to refine savings and  
11 cost benefit models and identify additional opportunities for energy efficiency.

12 168. The approach for measurement and evaluation of the energy efficiency programs is  
13 to integrate data collection and tracking activities directly into the program implementation  
14 process. In fact, Commission Decision No. 69663 (June 28, 2007) requires APS to:

15 Use measured savings obtained from APS customers by the MER contractor  
16 beginning no later than July 1, 2007; and that the averages of actual measured  
17 usage, for both standard and upgraded equipment, should be recalculated by the  
18 MER from usage samples for each prescriptive measure based on new  
19 measurements from the field no less frequently than every two years.

20 169. APS integrates the most recent annual MER adjustments and process and impact  
21 findings into its annual Implementation Plan.

22 **MER Budget**

23 170. APS proposes to maintain a MER budget of \$2.5 million for 2012 to cover ongoing  
24 MER activities associated with the energy efficiency programs. APS will perform measurement  
25 and verification of the DR programs peak load reduction with detailed modeling and statistical  
26 techniques.

27 **X. Recommendations**

28 171. Staff has recommended approval of APS' 2012 Plan, as discussed herein. A  
summary of Staff's recommendations are presented below.

...

1           172. Staff has recommended approval of the revised Consumer Products Program; the  
2 revised Residential HVAC Program; the revised Home Performance with Energy Star Program;  
3 the revised Residential New Construction Program; the revised Multifamily Energy Efficiency  
4 Program; the proposed EMS and LED measures within the Non-Residential Program; and the  
5 Energy Codes & Standards Support Project.

6           173. It is Staff's expectation that, once APS has compiled 12 months of data regarding  
7 actual energy savings associated with pool pump timers, the Company will file a letter detailing  
8 the participation levels for this measure and whether or not the timer measure results in cost-  
9 effective energy savings.

10           174. Staff has recommended that timers cease to be included as a measure eligible for  
11 rebates in future years unless savings from the timers can be verified by the Company.

12           175. Staff has recommended that APS not be allowed to include savings impacts from  
13 the pool pump and pool pump motor legislation as energy savings from building codes under  
14 A.A.C. R14-2-2404(E).

15           176. Staff has recommended that the number of participants, energy savings, coincident  
16 demand, measure life, actual expenses, etc. be reported separately for the Residential HVAC and  
17 HPwES components of the Existing Homes Program in the Company's Annual DSM Progress  
18 Report.

19           177. Staff has further recommended that APS report the current HPwES measures  
20 separate from the HPwES performance-based tiers but include sufficient information within the  
21 tier-level reporting so Staff is aware of the measures being installed within each performance-  
22 based tier.

23           178. Staff has recommended that APS track and report in the Company's Annual DSM  
24 Progress Report the number and type of optional measures that builders/developers are choosing to  
25 install under the MEEP BOPs along with the energy savings, coincident demand savings, and  
26 actual costs for each measure.

27           179. Staff has recommended that APS report in its Annual DSM Progress Report the  
28 number of measures installed, the annual energy and capacity savings, and the measure life for the

1 EMS and LED measures on an individual measure basis so that both the Company and Staff are  
2 able to clearly identify those measure preferred by customers and the individual energy savings  
3 characteristics associated with these new measures.

4 180. Staff has recommended that the Energy Codes & Standards Support Project be  
5 renamed the Energy Building Codes Support Project to reflect that only savings from improved  
6 building codes, and not appliance standards, are eligible to be counted under the standard.

7 181. Staff has recommended that MER information for the Energy Building Codes  
8 Support Project be included in APS' Annual DSM Progress Report.

9 182. Staff has not recommended approval of the Renewable Energy and Energy  
10 Efficiency Integration Pilot Program at this time.

11 183. Staff has recommended granting APS' request to extend the HEI pilot period so that  
12 two summers of information may be captured, as proposed in the original application and as  
13 approved by the Commission.

14 184. Staff has further recommended that the budget for the HEI Pilot be limited to the  
15 budgets approved for the pilot program in Decision No. 72214 (March 3, 2011) and the  
16 Commission's decision in this docket for the 2012 Plan.

17 185. Staff has recommended maintaining the flexibility to shift budgeted funds from one  
18 program to another program in the same sector (Residential or Non-Residential) per calendar year  
19 with the exception that funds may not be shifted from Low Income or Schools programs.

20 186. Staff has also recommended that APS be allowed to exceed any DSM program  
21 annual budget by up to 5 percent without prior Commission authorization, rather than the 15  
22 percent approved in Decision No. 70637 (December 11, 2008).

23 187. Staff has recommended that, in all future DSM Implementation Plans, the Company  
24 use the same input values and methodology as Staff for calculating the present value benefits and  
25 costs to determine benefit-cost ratios.

26 188. Staff has recommended approval for recovery of incremental costs for marketing,  
27 customer acquisition, and MER for DR rates, which includes time-of-use rates, through the  
28 DSMAC and has included these costs in its DSMAC calculation.

1           189. Staff has recommended DSMAC charges of \$0.002793 per kWh and \$1.0620 per  
2 kW. Staff has recommended that APS file its DSMAC tariff in compliance with the Decision in  
3 this case within 15 days of the effective date of the Decision.

4           190. Staff has recommended that APS' performance incentive for 2012 be \$6,665,332  
5 and that the performance incentive true-up calculation be provided in the Annual DSM Progress  
6 Report.

7           191. Staff has recommended that APS' programs continue to encourage participation in  
8 other municipal, state, or federal government energy conservation programs and that the reporting  
9 requirements of A.A.C. R14-2-213 be superseded by A.A.C. R14-2-2409 and the reporting  
10 requirements included in the Commission's decision in this docket.

11           192. Staff has recommended that the reporting requirements ordered in Decision Nos.  
12 59601 (December 5, 1995); 67744 (April 7, 2005); 68648 (April 12, 2006); 70637 (December 11,  
13 2008); 71444 (December 23, 2009); 71866 (September 1, 2010); 72032 (December 10, 2010);  
14 72060 (January 6, 2011); 72088 (January 20, 2011) be superseded by the EE Rules such that APS  
15 only be required to file an Annual DSM Progress Report on March 1 of each year, and a status  
16 report on September 1, in a Commission-established docket for that year, rather than filing  
17 separate reporting materials in the various dockets discussed above.

18           193. Beyond the reporting requirements of the EE Rules detailed in A.A.C. R14-2-2409,  
19 Staff has also recommended that APS include the following information in its Annual DSM  
20 Progress Reports:

- 21           • whether, and what type of, DSM measures are installed by customers  
22           subsequent to the receipt of study or design assistance incentives;
- 23           • a list of community education and consumer outreach efforts and advertising  
24           and marketing activities at the program level for each program;
- 25           • energy savings, as required by the EE Rules, for each measure for the previous  
26           calendar year and program-to-date, in terms of annual energy savings, lifetime  
27           energy savings over the expected life of the measure, and peak load MW  
28           savings;
- cost (actual expenditures) and budget information in the disaggregated manner  
          dictated by the EE Rules;

- 1 • reduced emissions of SO<sub>x</sub>, NO<sub>x</sub>, CO<sub>2</sub>, and PM<sub>10</sub>;
- 2 • for Direct Install measures, the 1) active number of contractors and contractor
- 3 identification, 2) number of Direct Install jobs completed, 3) dollar value of the
- 4 Direct Install incentives paid to contractors, 4) dollar value of Direct Install
- 5 jobs paid by the customer, 5) number of each Direct Install measure for which
- 6 incentives were paid, 6) number of instances when incentives were reduced
- 7 because of eligibility for incentives paid by other entities, 7) spending and
- 8 savings numbers attributable to Direct Install for the previous calendar year and
- 9 program-to-date, 8) descriptions of the types of businesses participating in
- 10 Direct Install with frequencies of participation for each type, and 9) an
- 11 estimation of the reduced marketing or other program or administration costs
- 12 compared to those that would have been expended if the measures were
- 13 implemented through a non-Direct Install program;
- 14 • the level of spending associated with non-energy efficiency measures in the
- 15 Energy Wise program;
- 16 • the level of spending associated with non-energy efficiency measures in the
- 17 Appliance Recycling program;
- 18 • a separate section for Self Direction projects;
- 19 • the number and size of the loans, the number and size of the loans in default,
- 20 the total amount found to be uncollectible, and any other information necessary
- 21 for the Commission to understand the progress and status of the REEF program
- 22 and the Non-Residential Customer Repayment Financing program;
- 23 • detailed information on how savings from the Bid for Efficiency pilot measure
- 24 are verified; and
- 25 • an Implementation budget category for applicable programs and, for each
- 26 applicable program, how much Implementation funding is retained by APS and
- 27 how much is paid to outside contractors.
- 28

194. Staff has recommended that APS present an overview of its Annual DSM Progress Report to the Commission at a Spring (April or May) DSM Open Meeting to be scheduled within 60 days of APS filing its Annual DSM Progress Report on March 1 of each year.

#### CONCLUSIONS OF LAW

1. Arizona Public Service Company is an Arizona public service corporation within the meaning of Article XV, Section 2, of the Arizona Constitution.

...





1 IT IS FURTHER ORDERED that Arizona Public Service Company be allowed to include  
2 savings impacts from the pool pump and pool pump motor legislation as energy savings from  
3 building codes under A.A.C. R14-2-2404(E).

4 IT IS FURTHER ORDERED that the number of participants, energy savings, coincident  
5 demand, measure life, actual expenses, etc. be reported separately for the Residential HVAC and  
6 Home Performance with ENERGY STAR<sup>®</sup> components of the Existing Homes Program in the  
7 Company's Annual DSM Progress Report.

8 IT IS FURTHER ORDERED that Arizona Public Service Company report the current  
9 Home Performance with ENERGY STAR<sup>®</sup> measures separate from the Home Performance with  
10 ENERGY STAR<sup>®</sup> performance-based tiers but include sufficient information within the tier-level  
11 reporting so Staff is aware of the measures being installed within each performance-based tier.

12 IT IS FURTHER ORDERED that Arizona Public Service Company track and report in the  
13 Company's Annual DSM Progress Report the number and type of optional measures that  
14 builders/developers are choosing to install under the Multifamily Energy Efficiency Program  
15 Builder Option Packages along with the energy savings, coincident demand savings, and actual  
16 costs for each measure.

17 IT IS FURTHER ORDERED that Arizona Public Service Company report in its Annual  
18 DSM Progress Report the number of measures installed, the annual energy and capacity savings,  
19 and the measure life for the Energy Management Systems and Light Emitting Diode measures on  
20 an individual measure basis so that both the Company and Staff are able to clearly identify those  
21 measure preferred by customers and the individual energy savings characteristics associated with  
22 these new measures.

23 IT IS FURTHER ORDERED that the proposed 2012 budget for the Shade Tree program  
24 shall be reduced by \$150,000 from \$447,000 to \$297,000.

25 IT IS FURTHER ORDERED that Measurement, Evaluation and Research information for  
26 the Energy Building Codes Support Project be included in APS' Annual DSM Progress Report.

27 IT IS FURTHER ORDERED that the Renewable Energy and Energy Efficiency  
28 Integration Pilot Program is not approved at this time.

1 IT IS FURTHER ORDERED that the HEI pilot period be extended so that two summers of  
2 information may be captured, as proposed in the original application and as approved by the  
3 Commission.

4 IT IS FURTHER ORDERED that the budget for the HEI Pilot be limited to the budgets  
5 approved for the pilot program in Decision No. 72214 (March 3, 2011) and the Commission's  
6 decision in this docket for the 2012 Plan.

7 IT IS FURTHER ORDEREDED that Arizona Public Service Company shall maintain the  
8 flexibility to shift budgeted funds from one program to another program in the same sector  
9 (Residential or Non-Residential) per calendar year with the exception that funds may not be shifted  
10 from Low Income or Schools programs.

11 IT IS FURTHER ORDERED that Arizona Public Service Company be allowed to exceed  
12 any DSM program annual budget by up to 5 percent without prior Commission authorization.

13 IT IS FURTHER ORDERED that, in all future DSM Implementation Plans, the Company  
14 use the same input values and methodology as Staff for calculating the present value benefits and  
15 costs to determine benefit-cost ratios.

16 IT IS FURTHER ORDERED that recovery of incremental costs for marketing, customer  
17 acquisition, and MER for Demand Response rates, which includes time-of-use rates, through the  
18 DSMAC be and hereby is approved.

19 IT IS FURTHER ORDERED that to ensure accurate and timely cost-effectiveness analysis  
20 through the use of one model and consistent input values, Staff should attempt to retain an  
21 independent third-party consultant possibly through entities such as the United States Department  
22 of Energy State and Local Energy Efficiency Action Network Technical Assistance Program or the  
23 National Association of Regulatory Utility Commissioners State Electricity Regulators Capacity  
24 Assistance and Training program, to assist a Staff-led working group, including the Company and  
25 interested stakeholders, in (a) exploring effective options for cost-effectiveness analysis models;  
26 (b) selecting and securing one model to be used by the Company and Staff for cost-effectiveness  
27 analysis; (c) resolving any differences in key input values used in the analysis; (d) documenting  
28 the key input values in a Technical Reference Manual to be updated by the Company and filed

1 with each Implementation Plan; and (e) creating templates for Implementation Plans and annual  
2 progress and status reports.

3 IT IS FURTHER ORDERED that Arizona Public Service Company shall initiate a pilot  
4 project in its Shade Tree Program to test the feasibility, effectiveness, and economic advantages to  
5 using online training to either supplement or replace the event-located training currently being  
6 used by the Company to train program participants in properly locating, planting, and caring for  
7 shade trees.

8 IT IS FURTHER ORDERED that the ratepayers, selected to participate in the  
9 Conservation Behavioral Pilot, shall have the ability to opt-out or withdraw from the program.  
10 Any notice of selection shall also provide clear and obvious steps to undertake the opt-out process,  
11 in each program related correspondence.

12 IT IS FURTHER ORDERED that in Arizona Public Service Company's next Demand Side  
13 Management Implementation Plan, in calculating the cost-effectiveness of programs and measures,  
14 Staff and Arizona Public Service Company shall include the costs of Measurement, Evaluation and  
15 Research and the estimated costs of any Performance Incentives.

16 IT IS FURTHER ORDERED that the DSMAC charges of \$0.002717 per kWh and \$0.9685  
17 per kW be and hereby are approved.

18 IT IS FURTHER ORDERED that Arizona Public Service Company shall not exceed its  
19 total DSM budget by more than 5 percent without Commission approval. Any spending that  
20 exceeds that 2012 budget will be trueed up according to the Commission approved Demand Side  
21 Management Adjustment Charge Plan for Administration.

22 IT IS FURTHER ORDERED that Arizona Public Service Company shall file its DSMAC  
23 tariff in compliance with the Decision in this case within 15 days of the effective date of the  
24 Decision.

25 IT IS FURTHER ORDERED that Arizona Public Service Company performance incentive  
26 for 2012 be \$6,665,332 and that the performance incentive true-up calculation be provided in the  
27 Annual DSM Progress Report.

28 ...

1 IT IS FURTHER ORDERED that Arizona Public Service Company programs continue to  
2 encourage participation in other municipal, state, or federal government energy conservation  
3 programs and that the reporting requirements of A.A.C. R14-2-213 be superseded by A.A.C. R14-  
4 2-2409 and the reporting requirements included in the Commission's decision in this docket.

5 IT IS FURTHER ORDERED that the reporting requirements ordered in Decision Nos.  
6 59601 (December 5, 1995); 67744 (April 7, 2005); 68648 (April 12, 2006); 70637 (December 11,  
7 2008); 71444 (December 23, 2009); 71866 (September 1, 2010); 72032 (December 10, 2010);  
8 72060 (January 6, 2011); 72088 (January 20, 2011) be superseded by the EE Rules such that APS  
9 only be required to file an Annual DSM Progress Report on March 1 of each year, and a status  
10 report on September 1, in a Commission-established docket for that year, rather than filing  
11 separate reporting materials in the various dockets discussed above.

12 IT IS FURTHER ORDERED that, beyond the reporting requirements of the EE Rules  
13 detailed in A.A.C. R14-2-2409, Arizona Public Service Company include the following  
14 information in its Annual DSM Progress Reports:

- 15 • whether, and what type of, DSM measures are installed by customers  
16 subsequent to the receipt of study or design assistance incentives;
- 17 • a list of community education and consumer outreach efforts and advertising  
18 and marketing activities at the program level for each program;
- 19 • energy savings, as required by the EE Rules, for each measure for the previous  
20 calendar year and program-to-date, in terms of annual energy savings, lifetime  
21 energy savings over the expected life of the measure, and peak load MW  
22 savings;
- 23 • cost (actual expenditures) and budget information in the disaggregated manner  
24 dictated by the EE Rules;
- 25 • reduced emissions of SO<sub>x</sub>, NO<sub>x</sub>, CO<sub>2</sub>, and PM<sub>10</sub>;
- 26 • for Direct Install measures, the 1) active number of contractors and contractor  
27 identification, 2) number of Direct Install jobs completed, 3) dollar value of the  
28 Direct Install incentives paid to contractors, 4) dollar value of Direct Install  
jobs paid by the customer, 5) number of each Direct Install measure for which  
incentives were paid, 6) number of instances when incentives were reduced  
because of eligibility for incentives paid by other entities, 7) spending and  
savings numbers attributable to Direct Install for the previous calendar year and  
program-to-date, 8) descriptions of the types of businesses participating in

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Direct Install with frequencies of participation for each type, and 9) an estimation of the reduced marketing or other program or administration costs compared to those that would have been expended if the measures were implemented through a non-Direct Install program;

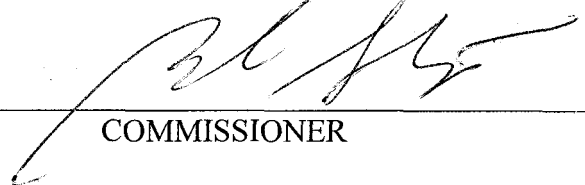
- the level of spending associated with non-energy efficiency measures in the Energy Wise program;
- the level of spending associated with non-energy efficiency measures in the Appliance Recycling program;
- a separate section for Self Direction projects;
- the number and size of the loans, the number and size of the loans in default, the total amount found to be uncollectible, and any other information necessary for the Commission to understand the progress and status of the REEF program and the Non-Residential Customer Repayment Financing program;
- detailed information on how savings from the Bid for Efficiency pilot measure are verified; and
- an Implementation budget category for applicable programs and, for each applicable program, how much Implementation funding is retained by APS and how much is paid to outside contractors.

1 IT IS FURTHER ORDERED that Arizona Public Service Company shall present an  
 2 overview of its Annual DSM Progress Report to the Commission at a Spring (April or May) DSM  
 3 Open Meeting to be scheduled within 60 days of Arizona Public Service Company filing its  
 4 Annual DSM Progress Report on March 1 of each year.

5 IT IS FURTHER ORDERED that this Order shall become effective immediately.

6 **BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION**

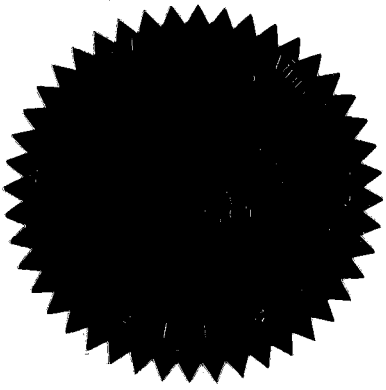
7   
 8 CHAIRMAN

  
 COMMISSIONER

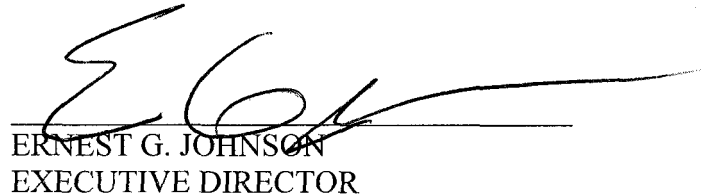
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 10 COMMISSIONER

  
 11 COMMISSIONER

  
 COMMISSIONER



12 IN WITNESS WHEREOF, I ERNEST G. JOHNSON,  
 13 Executive Director of the Arizona Corporation Commission,  
 14 have hereunto, set my hand and caused the official seal of this  
 15 Commission to be affixed at the Capitol, in the City of Phoenix,  
 this 4th day of April, 2012.

16   
 17 ERNEST G. JOHNSON  
 18 EXECUTIVE DIRECTOR

19 DISSENT: \_\_\_\_\_

20 DISSENT: \_\_\_\_\_

21 SMO:LAF:kdh/MAS

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