

**ORIGINAL**

# OPEN MEETING

## MEMORANDUM



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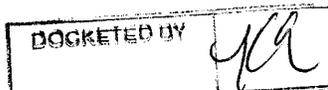
2016 MAY 31 P 3:09

FROM: Utilities Division

MAY 31 2016

AZ CORP COMMISSION  
DOCKET CONTROL

DATE: May 31, 2016



RE: IN THE MATTER OF ~~THE~~ APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY FOR A RULING RELATING TO ITS 2016 DEMAND SIDE MANAGEMENT IMPLEMENTATION PLAN (DOCKET NO. E-01345A-15-0182)

### I. INTRODUCTION

On June 1, 2015, Arizona Public Service Company ("APS" or "Company") filed, with the Arizona Corporation Commission ("Commission"), an application for approval of its 2016 Demand-Side Management ("DSM") Implementation Plan ("2016 DSM Plan") in compliance with the Arizona Administrative Code ("A.A.C.") R14-2-2401 through R14-2-2419, the Electric Energy Efficiency Standards ("EE Rules"). On April 1, 2016, APS filed an amended 2016 DSM Plan. In its amended 2016 DSM Plan, APS proposes to maintain the spending level that was approved as part of the 2015 DSM Plan and keep the Demand-Side Management Adjustment Charge ("DSMAC") at its current Commission-approved level.<sup>1</sup>

### II. 2016 DSM PLAN

In its 2016 DSM Plan, APS proposes to continue its current Commission-approved DSM portfolio of programs and maintain the Commission-approved budget of \$68.9 million. APS's current portfolio includes a combination of programs/measures targeted to multiple customer segments as detailed below.

#### *Residential Programs*

- Consumer Products
- Existing Homes HVAC
- Home Performance with ENERGY STAR®\*
- Residential New Construction\*
- Low Income Weatherization\*
- Conservation Behavior
- Multi-Family Energy Efficiency\*
- Prepaid Energy Conservation\*<sup>2</sup>

#### *Non-Residential Programs (Solutions for Business)*

- Large Existing Facilities
- New Construction and Renovation
- Small Business

<sup>1</sup> The APS 2015 DSM Plan was approved in Decision No. 75323 dated November 25, 2015.

<sup>2</sup> APS intends to discontinue the Prepaid Energy Conservation Program at the end of 2016 per Decision No. 75323.

- Schools
- Energy Information Services

*Demand Response Programs*

- APS Peak Solutions<sup>®\*</sup>
- Super Peak Rate\*
- Time-of-Use (“TOU”) Rates\*
- Interruptible Rate\*
- Critical Peak Pricing Rates\*

APS is not proposing any changes to the programs marked with an asterisk listed above. Therefore, Staff is not addressing these programs at this time. The focus of Staff’s review is the proposed new/expanded measures APS has proposed in its amended 2016 DSM Plan listed below. APS is proposing the following residential and non-residential measures:

- Smart Thermostats as a new measure to its Consumer Products Program (residential) and Solutions for Business (non-residential);
- Western Cooling Control Devices as a new measure to its Existing Homes-Heating Ventilating Air Conditioning (“HVAC”) Program (residential) and Solutions for Business (non-residential);
- Conservation Behavior Program as an expanded measure (residential);
- HVAC Electronically Communicated (“EC”) Motors (non-residential); and
- Light Emitting Diode (“LED”) Linear Lighting (non-residential)

**A. Smart Thermostats**

APS is proposing to include smart thermostats as part of its Consumer Products Program and Solutions for Business Program. Smart thermostats are internet enabled and have the ability to ‘learn’ from a customer’s behaviors. These thermostats allow customers to remotely control the climate in their home/business from a mobile smart phone or web application. In addition, smart thermostats have the ability to show energy consumption in real-time and can self-adjust based on weather conditions. Smart thermostats improve HVAC operation by learning and adapting to usage patterns over time.

As part of the Consumer Products Program, APS will offer incentives for smart thermostats purchased through retailers and/or installed by an HVAC and/or home performance contractor. For each qualifying smart thermostat that is installed and activated, APS is proposing to offer an incentive of up to 75 percent of the installed incremental cost up to a maximum of \$100 per smart thermostat. As part of the Solutions for Business programs, APS is proposing to offer a \$60 incentive for each smart thermostat installed and activated.

*Cost Effectiveness*

Arizona Administrative Code (“A.A.C.”) R14-2-2412.B requires that the Societal Test be used for determining the cost-effectiveness of a DSM program or measure. Under the Societal Test, in order to be cost-effective, the ratio of benefits to costs must be greater than one.

Staff found that smart thermostats have a benefit-cost ratio of 1.72 as part of the Consumer Products Program. The table below shows the benefit-cost ratios for Smart Thermostats as part of the individual Solutions for Business programs.

<b>Solutions for Business Programs</b>	<b>Benefit-Cost Ratio</b>
Large Existing Facilities	1.25
Small Business	1.94
Schools	1.29
New Construction	1.45

*Staff Recommendations*

Staff recommends approval of the proposed smart thermostat measure as part of the Consumer Products Program and Solutions for Business programs.

**B. Western Cooling Control Device**

APS is proposing to include Western Cooling Control Device (“WCCD”) as part of its Existing Homes HVAC Program and Solutions for Business. The WCCD is a device that can be installed on HVAC equipment and helps improve the cooling performance of the air conditioner by adjusting the indoor fan run time to reduce the amount of dehumidification of the arid Southwest climate. The WCCD sets a delay of up to 5 minutes for the air handler fan to continue operating after the HVAC compressor cycle has shut off. This allows the unit to circulate air over the coil while it is still cold. APS is proposing to work with contractors to encourage the installation of the WCCDs and offer an incentive of 75 percent of the installed cost (an average of \$70/unit).

*Cost Effectiveness*

Staff found that WCCDs have a benefit-cost ratio of 1.13 as part of the Existing Homes HVAC. The table below shows the benefit-cost ratios for WCCDs as part of the individual Solutions for Business programs.

<b>Solutions for Business Programs</b>	<b>Benefit-Cost Ratio</b>
Large Existing Facilities	1.17
Small Business	1.63
Schools	1.63
New Construction	1.17

*Staff Recommendations*

Staff recommends approval of the Western Cooling Control Device measure as part of the Existing Homes HVAC Program and the Solutions for Business programs.

**C. Conservation Behavior Program**

The APS Conservation Behavior Program does not promote the purchase and installation of specific energy measures such as lighting or high efficiency appliances. Rather, using Comparative Home Energy Reports, the Conservation Behavior Program promotes changes in behavior and adoption of measures designed to reduce energy usage. The reports are provided periodically throughout the year and compare the energy usage in a customer's home with other homes in the customer's area, educating customers about the norm for comparable homes. The reports also include specific recommendations on how to improve a customer's energy efficiency, such as participating in other APS EE/DSM programs.

APS plans to test event-based messaging to approximately 47,000 customers who currently receive reports through the conservation behavior program. The goal is to achieve peak demand reductions and add energy efficiency savings during the highest system peak days of the year, or Behavior Demand Response. APS states that within 24 hours of preceding a day during which system demand is expected to peak, APS will send these customers a communication (email, voice recording, or opt-out options based on customer preference) informing them that demand for energy is likely to peak the following day during certain hours. Customers would then be asked to reduce their usage during the specified hours. Within a few days after the peak event, APS would inform customers how much they reduced their usage compared to their neighbors in similar dwellings.

*Cost Effectiveness*

Staff has found the expanded Conservation Behavior Program to be cost effective with a benefit-cost ratio of 6.38.

*Staff Recommendations*

Staff recommends approval of the expanded Conservation Behavior Program.

**D. HVAC EC Motors**

Traditional fans move air across the evaporator and condenser coils using shaded pole of permanent split capacitor motors which can be inefficient because these motors are not controllable and don't allow for speed variances. EC motors allow for variable speeds which can correspond to the units' need for air flow. EC motors slowly start and gradually increase speed of the fan versus starting and coming on completely immediately, thus increasing energy efficiency. APS's Solutions for Business programs currently include an EC motor incentive for refrigeration systems but not for HVAC systems. APS is proposing to expand this measure to apply to HVAC systems as well as refrigeration systems.

*Cost Effectiveness*

Staff previously found the EC motors measure cost-effective as it applied to refrigeration systems as part of the Solutions for Business programs. However, because APS is proposing to apply this measure differently (to HVAC systems), in these programs, Staff believes that it is appropriate to conduct a benefit-cost analysis for the measure as part of each of the individual Solutions for Business programs. The table below shows the benefit-cost ratios for WCCDs as part of the individual Solutions for Business programs.

<b>Solutions for Business Programs</b>	<b>Benefit-Cost Ratio</b>
Large Existing Facilities	1.32
Small Business	1.67
Schools	1.67
New Construction	1.35

*Staff Recommendations*

Staff recommends approval of the expansion of the HVAC EC motors measure as part of the Solutions for Business programs.

**E. LED Linear Lighting**

APS currently offers these lighting measures as part of the Solutions for Business programs on a custom basis which allows customers to bid competitively for program incentives within kWh savings guidelines. APS has evaluated these custom projects and has paid rebates for these measures. APS is proposing to add LED lighting measures as prescriptive measures.

*Cost-Effectiveness*

The table below shows the benefit-cost ratios for LED linear lighting measures as part of the individual Solutions for Business programs.

Solutions for Business Programs	Benefit-Cost Ratio
Large Existing Facilities	1.07
Small Business	1.07
Schools	1.07
New Construction	1.07

*Staff Recommendations*

Staff recommends approval of the LED linear lighting measure as a prescriptive measure as part of the Solutions for Business programs.

**F. Other Initiatives**

**System Savings Projects** – In Decision No. 74406, the Commission approved APS’s Systems Savings Initiative Program which allows APS to count cost-effective energy savings resulting from generation and delivery system improvements and facilities upgrades toward meeting the EE standard. APS plans to upgrade selected community streetlights throughout its service territory. In addition, APS plans to install Conservation Voltage Reduction (“CVR”) systems on additional feeders. Further, APS plans to perform energy efficiency upgrades to APS facilities similar to the projects that were completed in 2015.

**Building Codes and Appliance Standards** – The EE Rules allow for utilities to count up to one third of the energy savings from energy efficiency building codes. The Energy Codes and Appliance Standards Initiative encourages energy savings by supporting better compliance with energy codes and appliance standards in jurisdictions throughout APS’s service territory. In 2016, APS plans to begin tracking energy savings associated with the new Department of Energy (“DOE”)14 Seasonal Energy Efficiency Ratio (“SEER”) HVAC Southwest regional appliance standard.

According to APS, the new standards increase the minimum cooling efficiency requirement from SEER 13 to SEER 14 for split system central air conditioning units in the South and Southwest. In addition, the new standards include Energy Efficiency Ratio (“EER”) requirements for the Southwest region to ensure efficient operation at high outdoor temperatures. For heat pumps, the standards raise the cooling efficiency requirement to SEER 14 and increase the heating efficiency requirements. APS states that it has been working with HVAC contractors, homebuilders, and other trade allies to educate them on the upcoming standard which is set to take effect July 1, 2016.

*Staff Recommendations*

Staff recommends approval of the proposed system savings projects and building codes and appliance standards initiatives.

### III. ENERGY SAVINGS

In its amended application, APS provided a five-year look at the estimated energy savings that will be needed to meet compliance with the EE Rules by 2020. Based on its current retail sales forecasts, APS estimates that it will take approximately 3,905,000 MWhs of incremental energy savings from 2016 through 2020 to comply with the EE Standard based on the goal of achieving 22 percent savings of 2019 retail energy sales by 2020. However, APS states that the path to compliance is not gradual and consists of large jumps in the required energy savings from 2015 to 2016 which requires APS to ramp up savings significantly only to then ramp programs back down to meet lower goals from 2017 through 2020. In addition, APS states that beyond 2016, future annual savings targets will be addressed in subsequent EE/DSM Plans.

APS is proposing to even out the annual EE energy savings requirement from 2016 through 2020. While this would allow APS to reach the 22 percent energy savings requirement in 2020, APS would not reach each annual energy savings requirements. APS calculated the estimated total energy savings requirement for 2020 and divided it by the remaining five-year timeframe (see Table 1 of the amended application filed on April 1, 2016).

APS provided Staff with projected EE/Demand Response ("DR") savings. The savings estimate for 2016 is approximately 562,000 MWh. The table below shows the previous years' actual energy savings (2014 and 2015) compared to the estimated energy savings in 2016 and the estimated five-year savings trajectory which APS proposes to comply with the EE Standard energy savings requirement for 2020.

	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
Actual/Projected Sales (MWh)*	27,017,353	27,398,270	27,904,566	28,357,791	28,907,142	29,467,496	29,947,215
Required Savings (%)	7.25%	9.50%	12.00%	14.50%	17.00%	19.50%	22.00%
Required Savings from Prior year Sales (MWh)	2,036,351 <sup>3</sup>	2,566,649	3,287,792	4,046,162	4,820,824	5,636,893	6,482,849
EE/DR Program Savings (MWh)**	495,410	552,069	562,129	562,129	562,129	562,129	562,129
Total Cumulative Savings (MWh)	2,025,557 <sup>4</sup>	2,577,626	3,224,748 <sup>5</sup>	3,956,863 <sup>5</sup>	4,745,640 <sup>5</sup>	5,591,079 <sup>5</sup>	6,482,163 <sup>5</sup>
Savings (%)	7.21% <sup>6</sup>	9.54%	11.77%	14.18%	16.74%	19.34%	21.99%
Difference Between Required and Projected/Actual Savings (MWh)	(10,794)	11,332	(63,044)	(89,299)	(75,184)	(45,814)	(686)

\*2014 MWh sales are actual sales from DSM progress report, 2015 MWh sales are reported in response to a Staff data request, and 2016-2020 MWh sales are estimated as provided in the 2016 DSM Plan.

\*\* 2014 MWh savings from annual DSM progress report, 2015 MWh savings from MER report, and 2016-2020 MWh savings are estimated.

#### IV. PERFORMANCE INCENTIVE

The current performance incentive structure (which was approved in Decision No. 74406) is a tiered system that is based on a percentage of net benefits that is capped at a dollar amount per kWh of savings. Currently, the performance incentive is capped at \$0.0125 per kWh saved. The performance incentive is earned based on the amount of energy saved and the amount of customer net benefits (total program benefits – total program costs). The performance incentive calculation does not include net benefits from Codes and Appliance Standards or the APS System Savings Initiative Program per Decision No. 74406. Based on the structure and the estimated kWh savings for 2016, APS estimates that the performance incentive would be approximately \$3,030,000.

#### V. BUDGET/DEMAND SIDE MANAGEMENT ADJUSTMENT CHARGE (“DSMAC”)

APS is proposing to maintain the current budget of approximately \$68.9 million, approved by the Commission in Decision No. 75323, by reallocating funds in order to accommodate its proposed additional measures for 2016.<sup>7</sup> APS anticipates collecting approximately \$50.6 million

<sup>3</sup> The required savings of 7.25% for 2014 is calculated using the 2013 actual kWh sales (excluding resale) of 28,087,605 MWh from APS’s annual report filed with the Commission on April 16, 2014.

<sup>4</sup> Based on cumulative savings of 1,530,147 MWh in 2013.

<sup>5</sup> Includes the credit for Pre-EE Standard Savings per A.A.C. R14-2-2404 (D).

<sup>6</sup> Based on the Actual sales from 2013 (see footnote 3 above).

<sup>7</sup>The Appliance Recycling Program was terminated due to the vendor APS used for this program ceasing operations. Therefore, the budget for the program was redistributed.

from the DSMAC in 2016. With the addition of \$10 million collected through base rates, the total collected for 2016 would be a total of approximately \$60.6 million.

In addition, as of March 31, 2016, APS currently has a balancing account of approximately \$25.7 million of unallocated funds which have been collected but unspent. In Decision No. 75323, APS was ordered to use \$2 million of the funds in the balancing account to fund its Schools Pilot Program. Further, APS would use funds from the balancing account to cover Commission-approved budget spending should funds collected from the DSMAC fall short.

The table below shows what APS spent in 2015 (from the 2015 DSM Progress Report, filed March 1, 2016) and the proposed budget for 2016.

Energy Efficiency Programs	Actual 2015 Spending	Proposed 2016 Budget
<b>Residential</b>		
Consumer Products	\$8,266,353	\$9,926,000
Existing Homes HVAC	\$7,240,418	\$6,456,000
Home Performance w/ Energy Star	\$2,431,440	\$4,112,000
New Construction	\$5,299,615	\$5,680,000
Appliance Recycling	\$1,059,496	\$100,000
Conservation Behavior	\$1,498,334	\$1,667,000
Multi-Family	\$1,852,755	\$2,009,000
Shade Tree <sup>8</sup>	\$749	\$-
Prepaid	\$57,442	\$73,000
Low/Limited Income Weatherization	\$2,274,342	\$2,726,000
<b>Total Residential</b>	<b>\$29,980,94</b>	<b>\$32,749,00</b>
	4	0
<b>Non-Residential</b>		
Large Existing Facilities	\$19,263,71	\$21,216,000
	3	
New Construction	\$3,247,191	\$2,776,000
Small Business	\$2,248,990	\$1,858,000
Schools	\$2,282,114	\$2,020,000
Energy Information Services	\$36,885	\$99,000
<b>Total Non-Residential</b>	<b>\$27,078,89</b>	<b>\$27,969,00</b>
	3	0
<b>Total Energy Efficiency (Res and Non-Res)</b>	<b>\$57,059,83</b>	<b>\$60,718,000</b>
	7	
<b>Demand Response</b>	<b>Actual</b>	<b>Proposed</b>

<sup>8</sup> APS discontinued the Shade Tree Program in 2015 because it was no longer cost-effective.

	2015 Spending	2016 Budget
APS Peak Solutions-DR Marketing/MER <sup>9</sup>	\$1,790,958	\$2,902,000
<b>Total Demand Response/Load Management</b>	<b>\$1,790,958</b>	<b>\$2,902,000</b>
Codes and Standards	\$172,577	\$150,000
Measurement Evaluation and Research	\$1,835,226	\$2,100,000
Performance Incentive <sup>10</sup>	\$5,275,737	\$3,030,000
<b>Total C&amp;S/MER/PI</b>	<b>\$7,283,540</b>	<b>\$5,280,000</b>
<b>Total EE, DR, and C&amp;S/MER/PI</b>	<b>\$66,134,335</b>	<b>\$68,900,000</b>

Staff notes that APS has the flexibility to shift up to 50 percent of budgeted funds from one program to another within the same sector (Residential or Non-Residential) per calendar year with the exception that funds cannot be shifted from Low/Limited Income Weatherization or Schools programs. In addition, APS has the ability to exceed any DSM program annual budget by up to five percent (5%) without prior Commission approval.

The DSMAC provides for the recovery of DSM program costs, including energy efficiency programs, demand response programs, and energy efficiency performance incentives. The DSMAC approved by the Commission collects funds to pay for the Commission-approved programs within a DSM Plan. The DSMAC is applied to Standard Offer and Direct Access service schedules as a monthly per kWh charge (residential and general service customer with non-demand billing service schedules) or kW demand charges (general service customers with demand billing service schedules). APS is proposing to maintain the current Commission-approved DSMAC amounts (\$0.001845/kWh and \$0.696/kW).

#### *Recommendations*

Staff recommends that APS maintain the current Commission-approved total budget of \$68.9 million including the proposed reallocation of funds and the use of existing unallocated funds that have been collected, but unspent, for 2016, if necessary. In addition, Staff recommends that APS maintain the current Commission-approved DSMAC amounts of \$0.001845/kWh and \$0.696/kW.

<sup>9</sup> The spending/budget for the Demand Response Marketing/MER includes the Super Peak Rate, Critical Peak Pricing Rates, Interruptible Rate, Peak Time Rebate Programs, and the Time-of-Use Rates.

<sup>10</sup> The proposed PI was calculated in accordance with the revised methodology approved in Decision No. 74406.

## VI. RECOMMENDATIONS

Below are Staff's recommendations regarding the proposed modifications, as discussed herein, to the APS 2016 DSM Plan.

- Staff recommends approval of the smart thermostat measure as part of the Consumer Products Program and the Solutions for Business programs.
- Staff recommends approval of the Western Cooling Control Device measure as part of the Existing Homes HVAC Program and the Solutions for Business programs.
- Staff recommends approval of the expanded Conservation Behavior Program.
- Staff recommends approval of the expansion of the HVAC EC motors measure as part of the Solutions for Business programs.
- Staff recommends approval of the LED linear lighting measure as a prescriptive measure as part of the Solutions for Business programs.
- Staff recommends approval of the proposed system savings projects and building codes and appliance standards initiatives.
- Staff recommends approval of APS's proposal to even out the annual EE energy savings requirement from 2016 through 2020 as described above.
- Staff recommends that APS maintain the current Commission-approved total budget of \$68.9 million including the proposed reallocation of funds and the use of existing unallocated funds that have been collected, but unspent, for 2016, if necessary.
- Staff recommends that APS maintain the current Commission-approved DSMAC amounts of \$0.001845/kWh and \$0.696/kW.
- Staff recommends that the APS 2016 DSM Plan as specified herein remain in effect until further Order of the Commission.



Thomas M. Broderick  
Director  
Utilities Division

TMB:CLA:red/MAS

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**BEFORE THE ARIZONA CORPORATION COMMISSION**

DOUG LITTLE  
Chairman  
BOB STUMP  
Commissioner  
BOB BURNS  
Commissioner  
TOM FORESE  
Commissioner  
ANDY TOBIN  
Commissioner

IN THE MATTER OF THE APPLICATION )  
OF ARIZONA PUBLIC SERVICE )  
COMPANY FOR A RULING RELATING )  
TO ITS 2016 DEMAND SIDE )  
MANAGEMENT IMPLEMENTATION )  
PLAN. )

DOCKET NO. E-01345A-15-0182  
DECISION NO. \_\_\_\_\_  
ORDER

Open Meeting  
June 14 and 15, 2016  
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. Arizona Public Service Company (“APS” or “Company”) is certificated to provide electric service within portions of Arizona, pursuant to authority granted by the Arizona Corporation Commission (“Commission”).

**I. INTRODUCTION**

2. On June 1, 2015, APS filed, with the Arizona Corporation Commission (“Commission”), an application for approval of its 2016 Demand-Side Management (“DSM”) Implementation Plan (“2016 DSM Plan”) in compliance with the Arizona Administrative Code (“A.A.C.”) R14-2-2401 through R14-2-2419, the Electric Energy Efficiency Standards (“EE Rules”). On April 1, 2016, APS filed an amended 2016 DSM Plan. In its amended 2016 DSM Plan, APS proposes to maintain the spending level that was approved as part of the 2015 DSM Plan and keep the

1 Demand-Side Management Adjustment Charge (“DSMAC”) at its current Commission-approved  
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|----|---------------------------------------|---|
| 10 | • Consumer Products                   | • Low Income Weatherization*                |
| 11 | • Existing Homes HVAC                 | • Conservation Behavior                     |
| 12 | • Home Performance with ENERGY STAR®* | • Multi-Family Energy Efficiency*           |
|    | • Residential New Construction*       | • Prepaid Energy Conservation* <sup>2</sup> |

13 *Non-Residential Programs (Solutions for Business)*

- 14
- Large Existing Facilities
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18 *Demand Response Programs*

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**C. Conservation Behavior Program**

13. The APS Conservation Behavior Program does not promote the purchase and installation of specific energy measures such as lighting or high efficiency appliances. Rather, using Comparative Home Energy Reports, the Conservation Behavior Program promotes changes in behavior and adoption of measures designed to reduce energy usage. The reports are provided periodically throughout the year and compare the energy usage in a customer's home with other homes in the customer's area, educating customers about the norm for comparable homes. The reports also include specific recommendations on how to improve a customer's energy efficiency, such as participating in other APS EE/DSM programs.

14. APS plans to test event-based messaging to approximately 47,000 customers who currently receive reports through the conservation behavior program. The goal is to achieve peak demand reductions and add energy efficiency savings during the highest system peak days of the year, or Behavior Demand Response. APS states that within 24 hours of preceding a day during which system demand is expected to peak, APS will send these customers a communication (email, voice recording, or opt-out options based on customer preference) informing them that demand for energy is likely to peak the following day during certain hours. Customers would then be asked to reduce their usage during the specified hours. Within a few days after the peak event, APS would inform customers how much they reduced their usage compared to their neighbors in similar dwellings.

*Cost Effectiveness*

15. Staff has found the expanded Conservation Behavior Program to be cost effective with a benefit-cost ratio of 6.38.

*Staff Recommendations*

16. Staff has recommended approval of the expanded Conservation Behavior Program.

**D. HVAC EC Motors**

17. Traditional fans move air across the evaporator and condenser coils using shaded pole of permanent split capacitor motors which can be inefficient because these motors are not controllable and don't allow for speed variances. EC motors allow for variable speeds which can correspond to the units' need for air flow. EC motors slowly start and gradually increase speed of the fan versus starting and coming on completely immediately, thus increasing energy efficiency. APS's Solutions for Business programs currently include an EC motor incentive for refrigeration systems but not for HVAC systems. APS is proposing to expand this measure to apply to HVAC systems as well as refrigeration systems.

*Cost Effectiveness*

18. Staff previously found the EC motors measure cost-effective as it applied to refrigeration systems as part of the Solutions for Business programs. However, because APS is proposing to apply this measure differently (to HVAC systems), in these programs, Staff believes that it is appropriate to conduct a benefit-cost analysis for the measure as part of each of the individual Solutions for Business programs. The table below shows the benefit-cost ratios for WCCDs as part of the individual Solutions for Business programs.

Solutions for Business Programs	Benefit-Cost Ratio
Large Existing Facilities	1.32
Small Business	1.67
Schools	1.67
New Construction	1.35

*Staff Recommendations*

19. Staff has recommended approval of the expansion of the HVAC EC motors measure as part of the Solutions for Business programs.

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1 **E. LED Linear Lighting**

2 20. APS currently offers these lighting measures as part of the Solutions for Business  
3 programs on a custom basis which allows customers to bid competitively for program incentives  
4 within kWh savings guidelines. APS has evaluated these custom projects and has paid rebates for  
5 these measures. APS is proposing to add LED lighting measures as prescriptive measures.

6 *Cost-Effectiveness*

7 21. The table below shows the benefit-cost ratios for LED linear lighting measures as part  
8 of the individual Solutions for Business programs.

Solutions for Business Programs	Benefit-Cost Ratio
Large Existing Facilities	1.07
Small Business	1.07
Schools	1.07
New Construction	1.07

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14 *Staff Recommendations*

15 22. Staff has recommended approval of the LED linear lighting measure as a prescriptive  
16 measure as part of the Solutions for Business programs.

17 **F. Other Initiatives**

18 23. **System Savings Projects** – In Decision No. 74406, the Commission approved APS's  
19 Systems Savings Initiative Program which allows APS to count cost-effective energy savings resulting  
20 from generation and delivery system improvements and facilities upgrades toward meeting the EE  
21 standard. APS plans to upgrade selected community streetlights throughout its service territory. In  
22 addition, APS plans to install Conservation Voltage Reduction ("CVR") systems on additional feeders.  
23 Further, APS plans to perform energy efficiency upgrades to APS facilities similar to the projects that  
24 were completed in 2015.

25 24. **Building Codes and Appliance Standards** – The EE Rules allow for utilities to  
26 count up to one third of the energy savings from energy efficiency building codes. The Energy Codes  
27 and Appliance Standards Initiative encourages energy savings by supporting better compliance with  
28 energy codes and appliance standards in jurisdictions throughout APS's service territory. In 2016,

1 APS plans to begin tracking energy savings associated with the new Department of Energy  
2 (“DOE”)14 Seasonal Energy Efficiency Ratio (“SEER”) HVAC Southwest regional appliance  
3 standard.

4 25. According to APS, the new standards increase the minimum cooling efficiency  
5 requirement from SEER 13 to SEER 14 for split system central air conditioning units in the South  
6 and Southwest. In addition, the new standards include Energy Efficiency Ratio (“EER”) requirements  
7 for the Southwest region to ensure efficient operation at high outdoor temperatures. For heat pumps,  
8 the standards raise the cooling efficiency requirement to SEER 14 and increase the heating efficiency  
9 requirements. APS states that it has been working with HVAC contractors, homebuilders, and other  
10 trade allies to educate them on the upcoming standard which is set to take effect July 1, 2016.

#### 11 *Staff Recommendations*

12 26. Staff has recommended approval of the proposed system savings projects and building  
13 codes and appliance standards initiatives.

### 14 **III. ENERGY SAVINGS**

15 27. In its amended application, APS provided a five-year look at the estimated energy  
16 savings that will be needed to meet compliance with the EE Rules by 2020. Based on its current retail  
17 sales forecasts, APS estimates that it will take approximately 3,905,000 MWhs of incremental energy  
18 savings from 2016 through 2020 to comply with the EE Standard based on the goal of achieving 22  
19 percent savings of 2019 retail energy sales by 2020. However, APS states that the path to compliance  
20 is not gradual and consists of large jumps in the required energy savings from 2015 to 2016 which  
21 requires APS to ramp up savings significantly only to then ramp programs back down to meet lower  
22 goals from 2017 through 2020. In addition, APS states that beyond 2016, future annual savings  
23 targets will be addressed in subsequent EE/DSM Plans.

24 28. APS is proposing to even out the annual EE energy savings requirement from 2016  
25 through 2020. While this would allow APS to reach the 22 percent energy savings requirement in  
26 2020, APS would not reach each annual energy savings requirements. APS calculated the estimated  
27 total energy savings requirement for 2020 and divided it by the remaining five-year timeframe (see  
28 Table 1 of the amended application filed on April 1, 2016).

29. APS provided Staff with projected EE/Demand Response ("DR") savings. The savings estimate for 2016 is approximately 562,000 MWh. The table below shows the previous years' actual energy savings (2014 and 2015) compared to the estimated energy savings in 2016 and the estimated five-year savings trajectory which APS proposes to comply with the EE Standard energy savings requirement for 2020.

	2014	2015	2016	2017	2018	2019	2020
Actual/Projected Sales (MWh)*	27,017,353	27,398,270	27,904,566	28,357,791	28,907,142	29,467,496	29,947,215
Required Savings (%)	7.25%	9.50%	12.00%	14.50%	17.00%	19.50%	22.00%
Required Savings from Prior year Sales (MWh)	2,036,351 <sup>3</sup>	2,566,649	3,287,792	4,046,162	4,820,824	5,636,893	6,482,849
EE/DR Program Savings (MWh)**	495,410	552,069	562,129	562,129	562,129	562,129	562,129
Total Cumulative Savings (MWh)	2,025,557 <sup>4</sup>	2,577,626	3,224,748 <sup>5</sup>	3,956,863 <sup>5</sup>	4,745,640 <sup>5</sup>	5,591,079 <sup>5</sup>	6,482,163 <sup>5</sup>
Savings (%)	7.21% <sup>6</sup>	9.54%	11.77%	14.18%	16.74%	19.34%	21.99%
Difference Between Required and Projected/Actual Savings (MWh)	(10,794)	11,332	(63,044)	(89,299)	(75,184)	(45,814)	(686)

\*2014 MWh sales are actual sales from DSM progress report, 2015 MWh sales are reported in response to a Staff data request, and 2016-2020 MWh sales are estimated as provided in the 2016 DSM Plan.

\*\* 2014 MWh savings from annual DSM progress report, 2015 MWh savings from MER report, and 2016-2020 MWh savings are estimated.

#### IV. PERFORMANCE INCENTIVE

30. The current performance incentive structure (which was approved in Decision No. 74406) is a tiered system that is based on a percentage of net benefits that is capped at a dollar amount per kWh of savings. Currently, the performance incentive is capped at \$0.0125 per kWh saved. The performance incentive is earned based on the amount of energy saved and the amount of customer net benefits (total program benefits – total program costs). The performance incentive calculation does not include net benefits from Codes and Appliance Standards or the APS System Savings

<sup>3</sup> The required savings of 7.25% for 2014 is calculated using the 2013 actual kWh sales (excluding resale) of 28,087,605 MWh from APS's annual report filed with the Commission on April 16, 2014.

<sup>4</sup> Based on cumulative savings of 1,530,147 MWh in 2013.

<sup>5</sup> Includes the credit for Pre-EE Standard Savings per A.A.C. R14-2-2404 (D).

<sup>6</sup> Based on the Actual sales from 2013 (see footnote 3 above).

1 Initiative Program per Decision No. 74406. Based on the structure and the estimated kWh savings for  
2 2016, APS estimates that the performance incentive would be approximately \$3,030,000.

3 **V. BUDGET/DEMAND SIDE MANAGEMENT ADJUSTMENT CHARGE**  
4 **("DSMAC")**

5 31. APS is proposing to maintain the current budget of approximately \$68.9 million,  
6 approved by the Commission in Decision No. 75323, by reallocating funds in order to accommodate  
7 its proposed additional measures for 2016.<sup>7</sup> APS anticipates collecting approximately \$50.6 million  
8 from the DSMAC in 2016. With the addition of \$10 million collected through base rates, the total  
9 collected for 2016 would be a total of approximately \$60.6 million.

10 32. In addition, as of March 31, 2016, APS currently has a balancing account of  
11 approximately \$25.7 million of unallocated funds which have been collected but unspent. In Decision  
12 No. 75323, APS was ordered to use \$2 million of the funds in the balancing account to fund its  
13 Schools Pilot Program. Further, APS would use funds from the balancing account to cover  
14 Commission-approved budget spending should funds collected from the DSMAC fall short.

15 33. The table below shows what APS spent in 2015 (from the 2015 DSM Progress Report,  
16 filed March 1, 2016) and the proposed budget for 2016.

Energy Efficiency Programs	Actual 2015 Spending	Proposed 2016 Budget
<b>Residential</b>		
Consumer Products	\$8,266,353	\$9,926,000
Existing Homes HVAC	\$7,240,418	\$6,456,000
Home Performance w/ Energy Star	\$2,431,440	\$4,112,000
New Construction	\$5,299,615	\$5,680,000
Appliance Recycling	\$1,059,496	\$100,000
Conservation Behavior	\$1,498,334	\$1,667,000
Multi-Family	\$1,852,755	\$2,009,000
Shade Tree <sup>8</sup>	\$749	\$-
Prepaid	\$57,442	\$73,000
Low/Limited Income Weatherization	\$2,274,342	\$2,726,000
<b>Total Residential</b>	<b>\$29,980,944</b>	<b>\$32,749,000</b>
<b>Non-Residential</b>		
Large Existing Facilities	\$19,263,713	\$21,216,000
New Construction	\$3,247,191	\$2,776,000
Small Business	\$2,248,990	\$1,858,000

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28 <sup>7</sup>The Appliance Recycling Program was terminated due to the vendor APS used for this program ceasing operations. Therefore, the budget for the program was redistributed.

<sup>8</sup> APS discontinued the Shade Tree Program in 2015 because it was no longer cost-effective.

Schools	\$2,282,114	\$2,020,000
Energy Information Services	\$36,885	\$99,000
<b>Total Non-Residential</b>	<b>\$27,078,893</b>	<b>\$27,969,000</b>
<b>Total Energy Efficiency (Res and Non-Res)</b>	<b>\$57,059,837</b>	<b>\$60,718,000</b>
<b>Demand Response</b>	<b>Actual 2015 Spending</b>	<b>Proposed 2016 Budget</b>
APS Peak Solutions-DR Marketing/MER <sup>9</sup>	\$1,790,958	\$2,902,000
<b>Total Demand Response/Load Management</b>	<b>\$1,790,958</b>	<b>\$2,902,000</b>
Codes and Standards	\$172,577	\$150,000
Measurement Evaluation and Research	\$1,835,226	\$2,100,000
Performance Incentive <sup>10</sup>	\$5,275,737	\$3,030,000
<b>Total C&amp;S/MER/PI</b>	<b>\$7,283,540</b>	<b>\$5,280,000</b>
<b>Total EE, DR, and C&amp;S/MER/PI</b>	<b>\$66,134,335</b>	<b>\$68,900,000</b>

34. Staff notes that APS has the flexibility to shift up to 50 percent of budgeted funds from one program to another within the same sector (Residential or Non-Residential) per calendar year with the exception that funds cannot be shifted from Low/Limited Income Weatherization or Schools programs. In addition, APS has the ability to exceed any DSM program annual budget by up to five percent (5%) without prior Commission approval.

35. The DSMAC provides for the recovery of DSM program costs, including energy efficiency programs, demand response programs, and energy efficiency performance incentives. The DSMAC approved by the Commission collects funds to pay for the Commission-approved programs within a DSM Plan. The DSMAC is applied to Standard Offer and Direct Access service schedules as a monthly per kWh charge (residential and general service customer with non-demand billing service schedules) or kW demand charges (general service customers with demand billing service schedules). APS is proposing to maintain the current Commission-approved DSMAC amounts (\$0.001845/kWh and \$0.696/kW).

#### *Recommendations*

36. Staff has recommended that APS maintain the current Commission-approved total budget of \$68.9 million including the proposed reallocation of funds and the use of existing unallocated funds that have been collected, but unspent, for 2016, if necessary. In addition, Staff

<sup>9</sup> The spending/budget for the Demand Response Marketing/MER includes the Super Peak Rate, Critical Peak Pricing Rates, Interruptible Rate, Peak Time Rebate Programs, and the Time-of-Use Rates.

<sup>10</sup> The proposed PI was calculated in accordance with the revised methodology approved in Decision No. 74406.

1 recommends that APS maintain the current Commission-approved DSMAC amounts of  
2 \$0.001845/kWh and \$0.696/kW.

3 **VI. RECOMMENDATIONS**

4 37. Below are Staff's recommendations regarding the proposed modifications, as discussed  
5 herein, to the APS 2016 DSM Plan.

- 6 • Staff has recommended approval of the smart thermostat measure as part of the  
7 Consumer Products Program and the Solutions for Business programs.
- 8 • Staff has recommended approval of the Western Cooling Control Device measure as  
9 part of the Existing Homes HVAC Program and the Solutions for Business programs.
- 10 • Staff has recommended approval of the expanded Conservation Behavior Program.
- 11 • Staff has recommended approval of the expansion of the HVAC EC motors measure  
12 as part of the Solutions for Business programs.
- 13 • Staff has recommended approval of the LED linear lighting measure as a prescriptive  
14 measure as part of the Solutions for Business programs.
- 15 • Staff has recommended approval of the proposed system savings projects and building  
16 codes and appliance standards initiatives.
- 17 • Staff has recommended approval of APS's proposal to even out the annual EE energy  
18 savings requirement from 2016 through 2020 as described above.
- 19 • Staff has recommended that APS maintain the current Commission-approved total  
20 budget of \$68.9 million including the proposed reallocation of funds and the use of  
21 existing unallocated funds that have been collected, but unspent, for 2016, if necessary.
- 22 • Staff has recommended that APS maintain the current Commission-approved  
23 DSMAC amounts of \$0.001845/kWh and \$0.696/kW.
- 24 • Staff has recommended that the APS 2016 DSM Plan as specified herein remain in  
25 effect until further Order of the Commission.

26 CONCLUSIONS OF LAW

- 27 1. Arizona Public Service Company is an Arizona public service corporation within the  
28 meaning of Article XV, Section 2, of the Arizona Constitution.
2. The Commission has jurisdiction over Arizona Public Service Company and over the  
subject matter of the application.



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IT IS FURTHER ORDERED that Arizona Public Service Company's 2016 DSM Plan as specified herein remain in effect until further Order of the Commission.

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

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

CHAIRMAN COMMISSIONER

COMMISSIONER COMMISSIONER COMMISSIONER

IN WITNESS WHEREOF, I, JODI A. JERICH, Executive Director of the Arizona Corporation Commission, have hereunto, set my hand and caused the official seal of this Commission to be affixed at the Capitol, in the City of Phoenix, this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

\_\_\_\_\_  
JODI JERICH  
EXECUTIVE DIRECTOR

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

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

TMB:CLA:red\MAS

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