

# NEW APPLICATION



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## BEFORE THE ARIZONA CORPORATION COMMISSION

### COMMISSIONERS

11 DOUG LITTLE, Chairman  
12 BOB STUMP  
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Arizona Corporation Commission

DOCKETED

JUL 01 2016

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15 IN THE MATTER OF THE APPLICATION  
16 OF ARIZONA PUBLIC SERVICE  
17 COMPANY FOR APPROVAL OF ITS 2017  
18 RENEWABLE ENERGY STANDARD  
19 IMPLEMENTATION FOR RESET OF  
20 RENEWABLE ENERGY ADJUSTOR.

DOCKET NO. E-01345A-16-0238

**APPLICATION FOR APPROVAL  
OF 2017 RES IMPLEMENTATION  
PLAN**

21 The attached 2017 – 2021 Renewable Energy Standard Implementation Plan  
22 (2017 RES Plan or Plan) continues APS's commitment to the renewable energy targets  
23 established by the Renewable Energy Standard (RES). Over the past two years the  
24 amount of renewable energy on the APS system has grown substantially. In particular,  
25 the amount of rooftop solar continues to grow at an unprecedented pace. APS submits  
26 its 2017 RES Plan (attached as Exhibit A) pursuant to A.A.C. R14-2-1813 and in  
27 accordance with Staff's standardized reporting format developed pursuant to Decision  
28 No. 72737 (Jan. 18, 2012). Also attached is a one-page summary of the Plan (Exhibit B)

1 and a PowerPoint presentation outlining highlights of the Plan (Exhibit C) as required by  
2 Decision No. 72022 (Dec. 12, 2010).

3 APS's 2017 RES Plan requests funding for existing projects and commitments,  
4 including legacy performance based incentives, renewable purchase power costs and  
5 ongoing program administrative costs, including those associated with the high volume  
6 of rooftop solar interconnection applications. No new programs are proposed in the  
7 Plan. The Plan seeks budget approval in the total amount of approximately \$149.6  
8 million for 2017, including approximately \$126.7 million that will be collected through  
9 the RES adjuster in 2017. The Plan includes the following:

- 10 • Summary information regarding the amount of renewable generation on  
11 APS's system and its progress toward compliance with the RES;
- 12 • A request for a waiver under A.A.C R14-2-1816 of the residential  
13 distributed energy requirement contained in A.A.C. R14-2-1805 to  
14 recognize the substantial amount of non-incented residential distributed  
15 energy on APS's system;
- 16 • Expanded funding for residential rooftop solar interconnection program;
- 17 • A request to continue the Green Choice Rates and revise how renewable  
18 energy is certified under this program; and
- 19 • Estimated budgets for 2017 through 2021.

20 This Application briefly touches upon each in turn.

## 21 I. PLAN HIGHLIGHTS

### 22 A. APS Continues to Exceed Overall Compliance with the RES, But 23 Requests A Waiver Of The Residential Distributed Generation 24 Requirement Due to High Levels of Residential Rooftop Solar.

25 The Renewable Energy Standard requires APS to obtain 7 percent of its retail  
26 sales with renewable energy resources by the end of 2017. APS anticipates, given the  
27 amount of renewable energy already in its diverse resource portfolio and the current  
28 volume of interconnection applications for distributed generation, that approximately 12  
percent of the Company's retail sales will be met by renewable resources by the end of  
2017. And while APS is far ahead of compliance with the overall cumulative RES goal

1 and is compliant with the non-residential distributed generation requirements through  
2 2021, in 2017 it will not meet the residential distributed generation targets contained in  
3 the RES.

4 Under the RES rules, compliance with the distributed renewable energy  
5 requirement is measured through the acquisition of Renewable Energy Credits (RECs)  
6 by the utility from distributed energy resources. Specifically, the rule states “In order to  
7 improve system reliability, each Affected Utility shall be required to satisfy a  
8 Distributed Renewable Energy Requirements by obtaining Renewable Energy Credits  
9 from Distributed Renewable Energy Resources.” A.A.C. R14-2-1805(A). Utilities  
10 historically obtained RECs from residential distributed energy resources by paying up-  
11 front incentives to the owner of the renewable resource, *i.e.*, the customer placing  
12 rooftop solar on her home. However, in Decision No. 73636 (Jan. 31, 2013), the  
13 Commission phased out incentives for residential distributed energy programs.  
14 Commission Staff noted, among other things, that the marketplace for residential  
15 photovoltaic systems was extremely competitive and a substantial number of customers  
16 were installing rooftop solar without a substantial incentive. *See generally* Decision No.  
17 73636. Since residential incentives were discontinued in 2013, APS has continued to  
18 see tremendous growth of distributed generation in its service territory, particularly with  
19 residential rooftop solar installations.

20 Because the stated purposes of the RES rules, including improving system  
21 reliability and ensuring reliable electric service at reasonable rates, are being satisfied  
22 without the need to pay incentives, APS requests a permanent waiver of the residential  
23 distributed energy requirement contained in A.A.C. R14-2-1805 for 2017. A.A.C. R14-  
24 2-1816 provides that “[t]he Commission may waive compliance with any provision of  
25 the Article for good cause.” Good cause exists to waive the residential distributed  
26 energy requirements. Although the Commission discontinued upfront incentives, APS’s  
27 obligation to comply with the DG carve out remains. A permanent waiver would be the  
28

1 least cost way for APS to establish compliance with the carve out. Moreover, as  
2 documented in APS's most recent Renewable Energy Standard Compliance Report filed  
3 on April 1, 2016, there is a substantial amount of rooftop solar being installed in APS's  
4 service territory without the need for incentives. The amount of rooftop solar being  
5 installed, and the pace of installations, make clear that the purpose behind the DG carve  
6 out has been fulfilled. The DG industry has matured and can now stand on its own two  
7 feet.

8 APS's request for a waiver is also consistent with and supported by Commission  
9 Decision No. 74365 (Feb. 26, 2014). In that decision, the Commission found after  
10 extensive evidentiary proceedings that "it is reasonable and in the public interest, and  
11 good cause exists to authorize Arizona Public Service Company . . . to request, in their  
12 next REST Implementation Plan Filing . . . a full permanent waiver from the  
13 requirement of A.A.C. R14-2-1805 for a period of one year."

14 For these reasons, APS requests a full, permanent waiver of the residential  
15 distributed energy portion of A.A.C. R14-2-1805 for 2017.

16 **B. Expanded Funding for Interconnection Program**

17 The Company continues to experience record-high monthly application rates for  
18 rooftop solar. In June 2016, the Company received more than 1,700 residential  
19 interconnection requests, which is the highest number ever received by APS in a single  
20 month. The application rate for January to June 2016 was 43 percent higher than the  
21 same period in 2015, and residential solar capacity installed from January through June  
22 2016 was more than double the amount installed during the same period in 2015.

23 These record-high volumes have caused APS to increase its staffing to handle  
24 interconnection requests. Specifically, more people are needed to process this high  
25 volume of applications and install meters in a timely manner. APS anticipates that the  
26 pace of interconnection requests will continue to increase in 2017, particularly given the  
27 modifications to rates and net metering that are proposed in the general rate case filed by  
28

1 APS on June 1, 2016. *See* Docket No. E-01345A-16-0036. Thus, APS has requested in  
2 its 2017 budget \$12.8 million for distributed generation program administration and  
3 implementation. This budget request includes \$500,000 for information technology  
4 upgrades to modernize the Company's interconnection application system. Upgrades  
5 will consist of a modernized customer engagement portal that will streamline the  
6 customer application process. These upgrades are critical to the Company's ability to  
7 timely process interconnection applications and improve customer service.

### 8 **C. Continuation of Green Choice Program**

9 The Plan seeks a one-year extension of the Company's Green Choice Program  
10 and associated Green Power Rate Schedules GPS-1, GPS-2 and GPS-3. In 2017, APS  
11 intends to replace its current Green-e certification program. In lieu of using Green-e,  
12 APS will certify to its Green Choice customers the amount of green energy and  
13 associated RECs the customer has purchased from APS.

## 14 **II. APS'S PLAN PROPOSES A BUDGET AND RES ADJUSTOR TO** 15 **SUPPORT EXISTING APPROVED PROJECTS AND COMMITMENTS**

### 16 **A. Proposed 2017 Budget**

17 APS requires a total 2016 RES budget of approximately \$149.6 million. This is  
18 approximately \$1.7 million more than the budget for 2016. As part of standard program  
19 management practice and to moderate the 2017 budget impact on customers, APS  
20 intends to apply the following budget offsets that will reduce the amount APS must  
21 collect through the RES adjustor for 2017 to approximately \$126.7 million. The 2017  
22 budget offsets include approximately \$6 million collected from base rates, production  
23 tax credits for AZ Sun projects of approximately \$7.4 million, green choice revenue of  
24 approximately \$1.4 million, and \$8.2 million in reallocated program funds from prior  
25 years. *See* Plan at Exhibit 1A.

### 26 **B. Adjustment Schedule REAC-1**

27 As noted above, the Company's proposed 2017 Plan budget, including funding  
28 offsets, will result in a recovery of approximately \$126.7 million through Adjustment

1 Schedule REAC-1. Under this Plan, residential customers subject to the REAC-1 cap  
2 will pay \$4.79 per month while those residential DG customers subject to the average  
3 charge as ordered in Decision No. 73660 (Feb. 6, 2013) will pay \$4.36 per month. See  
4 Exhibit 1B to the Plan.

5 Adjustment Schedule REAC-1 is attached as Exhibit D and, for the Commission's  
6 convenience, a redlined copy is attached as Exhibit E.

7 **III. CONCLUSION**

8 In short, APS's 2017 RES Plan provides continued support and funding for all  
9 previously approved RES programs and commitments that will enable APS to meet its  
10 obligations under the RES while moderating incremental rate impact. Accordingly, APS  
11 requests that the Commission approve APS's 2017 RES Plan and budget as proposed.

12  
13 RESPECTFULLY SUBMITTED this 1st day of July 2016.

14  
15 By: Melissa M. Krueger  
16 Melissa M. Krueger  
17 Attorney for Arizona Public Service Company

18  
19 ORIGINAL and thirteen (13) copies  
20 of the foregoing filed this 1st day of  
21 July 2016, with:

22 Docket Control  
23 ARIZONA CORPORATION COMMISSION  
24 1200 West Washington Street  
25 Phoenix, Arizona 85007

26 Brian Morgan  
27  
28

## **Exhibit A**

# **APS Renewable Energy Standard Implementation Plan 2017-2021**

aps

**Renewable Energy Standard  
Implementation Plan 2017-2021**

July 1, 2016

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## i. Executive Summary

Arizona Public Service (APS or Company) is required by the Renewable Energy Standard (RES) to achieve 7.0 percent of retail sales with renewable resources by year-end 2017, increasing annually to 11.0 percent in 2021. In the following 2017-2021 RES Implementation Plan (Plan), APS requests funding approval for existing program commitments and deployment of previously authorized programs. With the exception of a shortfall of its residential distributed energy compliance target, the Company expects to achieve compliance with all other 2017 RES requirements, provided all of the resources discussed herein are authorized and continued as previously approved in prior Arizona Corporation Commission (Commission) decisions.

**Renewable Generation.** In Decision No. 74237 (January 7, 2014), the Commission authorized APS to move ahead with 20 MW of grid-scale, renewable generation (RG) projects under the AZ Sun Program. These projects included a 10 megawatt (MW) solar facility at Luke Air Force Base and the 10 MW Desert Star Solar Plant at the City of Phoenix's Buckeye landfill. Both projects were placed in commercial operation in 2015. No new AZ Sun installations are requested at this time.

**Distributed Generation.** Consistent with Commission requirements on incentive funding step downs and APS's compliance with the distributed generation (DG) requirements, APS ceased offering direct cash incentives for residential and non-residential solar PV grid-tied resources at the end of 2013. As of June 20, 2016, 23,584 residential customers and 1,004 non-residential customers received incentives to interconnect PV systems, with associated capacity of 137 MW-AC and 201 MW-AC, respectively. Based upon these currently installed resources, as well as commitments from previously approved program budgets, APS projects it will be in compliance with non-residential DG energy targets until 2021 and residential DG energy targets until December 2017. APS is not requesting funding for new solar PV grid-tied resource incentives in the Plan.

The above DG forecast does not include renewable energy credits (RECs) associated with non-incented installations. Through June 20, 2016, 25,043 residential PV grid-tied systems (165.3 MW-AC) and 327 non-residential PV systems (22.3 MW-AC) have been installed across the APS service territory and interconnected to APS's grid without receiving direct cash incentives. APS expects to be more than 95% compliant with the 2017 incremental residential DG goal; however, because the Company cannot count non-incented rooftop solar installations toward compliance, APS requests a full permanent waiver of the residential distributed energy requirement for 2017. APS continues to see historic rates of solar PV interconnections without an incentive; however, the DG compliance forecast only includes RECs associated with installations that received an incentive.

**Budget.** The requested budget for APS's 2017 Plan consists of funding for previously authorized programs, including legacy Production-Based Incentive (PBI) subsidy payments, purchased power (PPA) and revenue requirement costs, educational outreach, and increased

administration and implementation costs related to the increased penetration of rooftop solar in the Company's service territory.

APS expects the total base budget for PBI and other DG legacy costs, PPA projects, and APS-owned projects in 2017 to be \$149.6 million, and the total request for the 2017-2021 Plan to be \$694.7 million, not including any funding offsets.

## **I. Introduction**

In the 2017-2021 RES Implementation Plan, APS provides an update on authorized renewable energy programs, long-term subsidies associated with legacy customer incentive programs, generation projects, and the Green Choice Program, as well as any related budget requirements.

### **A. 2017-2021 RES Requirement**

The Arizona RES was established in August 2007, and requires APS to file a Plan each year for review and approval by the Commission.<sup>1</sup> The Plan describes the Company's strategy to meet the requirements of the RES for the next five calendar years, identifying the eligible technologies, the expected schedule for resource incorporation on a year-by-year basis, and both the megawatts (MW) and megawatt hours (MWh) expected to be added to the APS portfolio by the incorporation of those resources.

APS has prepared this Plan for the five year period 2017-2021 in compliance with the RES Rules. The RES requires that affected utilities satisfy an annual renewable energy requirement by providing a percentage of their electric retail sales from renewable energy resources. The required percentage for the current implementation period begins at 7 percent in 2017, increasing to 11 percent in 2021 and to 15 percent of the utility's total retail sales by the year 2025.

### **B. Renewable energy subsidies: a legacy of investment**

Through a number of Commission-approved, customer-facing incentive programs, APS has made available more than \$800 million in cash incentives committed or already paid to residential and commercial customers over the last decade. More than half of that incentive pool, \$418 million, still remains to be paid out as PBIs for commercial customers.

Also important, residential customers with installed rooftop solar through the end of calendar year 2015 drive a net electric metering (NEM) subsidy that totals more than \$31.6 million annually.

With high volumes of solar penetration, and considering the typical 20-year life of a rooftop solar system, the Company estimates approximately \$1 billion in NEM subsidies will be received by rooftop solar customers over the life of systems installed through mid-2017.<sup>2</sup>

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<sup>1</sup> A.A.C. R14-2-1801 et. seq.

<sup>2</sup> Docket No. E-01345A-16-0036, Direct Testimony of Leland R. Snook on behalf of Arizona Public Service Company, p. 31.

## **II. Renewable Generation**

Renewable Generation resources within the APS portfolio are larger-scale renewable energy resources that serve the energy demand of all APS customers. These resources are part of the Company's energy portfolio as provided to the Commission in the Company's 2014 Integrated Resource Plan and in the 2017 Integrated Resource Plan preliminary filing, and as such they are applied to APS's overall RES requirements.<sup>3</sup> APS is required to include estimated pricing information related to RG projects. Similar to prior Plans, APS has included a redacted version of this information in Exhibit 3B and is providing un-redacted pricing information directly to Commission Staff.

In Decision No. 74237, the Commission authorized APS to move ahead with 20 MW of grid-scale, renewable generation (RG) projects under the AZ Sun Program. These projects included a 10 megawatt (MW) solar facility at Luke Air Force Base and the 10 MW Desert Star Solar Plant at the City of Phoenix's Buckeye landfill. Both projects were placed in commercial operation in 2015.

## **III. Distributed Generation**

### **A. APS interconnection program**

Consistent with Commission direction on incentive funding step downs and APS performance with the DG requirements, APS ceased offering direct cash incentives for residential and non-residential solar PV grid-tied resources at the end of 2013. The Company continues to experience record-high monthly application rates for non-incented residential PV grid-tied generating facilities during 2016. In June 2016, the Company received over 1,700 residential interconnection requests, which is the most ever received by APS in a single month. The application rate for January to June 2016 was 43 percent higher than the same period in 2015, while residential solar capacity installed from January through June 2016 was more than double that installed during the same period in 2015.

With the high volume of interconnection requests comes increased activity in the areas of application review and meter installation, and our RES budget request of \$12.8 million for distributed generation program administration and implementation reflects the current market reality. In light of the above, and our projection that the pace of residential application volume will continue to increase at a record pace in 2017, the above request takes into consideration additional funding necessary to support future customer requests for interconnection.

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<sup>3</sup> Docket Nos. E-0000V-13-0070 and E-0000V-15-0094, respectively, filed in compliance with A.A.C. R14-2-703.

APS also seeks \$500,000 in information technology funds to modernize the Company's interconnection application software system. Upgrades will include a modernized customer engagement portal that will streamline the customer application process.

## **B. Managing long-term PBI contracts and payments**

From 2009 to 2013, APS was authorized to implement annual production-based incentive (PBI) programs for non-residential customers who deploy PV grid-tied resources at commercial sites. PBIs are paid on a cents/kWh basis for actual solar generation. These legacy PBI contracts represent long-term, ongoing RES budget commitments that are gradually paid to customers or third-party providers over a period of up to 20 years.

Exhibit 3C provides detail on this category of subsidy expenditures. APS has entered into long-term PBI contracts totaling \$622.2 million over the life of the RES. By the end of 2017, the Company will have paid approximately \$167.3 million cumulatively against the total. APS estimates that at the end of 2017, \$417.7 million in lifetime PBI payments will remain to be collected and paid for through future RES budgets, with \$37.2 million projected to be paid during 2017. Exhibit 3C also includes the amortization of PBI commitments through ongoing incentive payments as well as the reduction in remaining PBI authorizations no longer needed to complete prior programs.

APS renewable energy program staff manage all of the associated PBI credit purchase contracts, assists customers with system modification queries, and support various departments within the Company to manage quarterly PBI payment processing, facilitate credit purchase agreement (CPA) assignments and contact or payee information changes, as well as resolve customer billing queries. Ongoing PBI contract management is included in the DG program administration and implementation budget request.

## **C. Solar water heating**

### **1. Incentive program**

Consistent with Decision No. 75422 approved on January 19, 2016, APS is not requesting new funding for solar water heating (SWH) resources in the 2017 Plan. The Company continues to market the solar water heating incentive program and will disburse incentives for projects submitted in 2016.

Seeking to increase awareness of the SWH incentive program, the Company passed out marketing materials at high-profile events such as the 2016 Phoenix Earth Day event, the Maricopa County Fair, and home and garden shows in Maricopa County, Prescott Valley, Yuma, and Flagstaff. The Company also distributed a newsletter to 1.2 million customers during the February 2016 billing cycle. APS launched a social media photo fact campaign in February-March 2016 to highlight potential residential bill savings with SWH. Samples of these materials are provided in the Appendix. The Company will continue to distribute program materials throughout the remainder of

2016 at community and sporting events. The Educational Outreach budget supports this and other RES-attributable marketing efforts.

Application processing and inspections for SWH systems are supported by the \$12.8 million distributed generation program administration and implementation budget.

## **2. Solar water heating study**

In Decision No. 74949, the Commission authorized APS to spend \$10,000 to determine the energy and cost savings realized by solar water heater installations, in comparison to the expected savings, for both the customer and APS. This will be achieved by tracking real usage data via the Aquanta Ohm meter device, which can be installed on an existing solar water heater to track the solar energy usage versus traditional electric water heater usage. As of January 2016, all devices have been installed on all homes participating in the study. Data collection has been proceeding and quarterly reviews are planned. The final report and results are expected in 2017.

## **D. Residential DG Carve-Out Waiver**

APS projects it will be in compliance with non-residential DG energy targets until 2021 and residential DG energy targets until December 2017. Because APS will not meet the residential DG carve-out in 2017, APS requests a full permanent waiver of the residential DG carve-out requirement in 2017 in accordance A.A.C. R14-2-1816 and with Decision No. 74365 (February 26, 2014).

Through June 20, 2016, 25,043 residential PV grid-tied systems for 165.3 MW-AC and 327 non-residential PV systems for 22.3 MW-AC have been installed and interconnected without receiving direct cash incentives. APS continues to see historic rates of solar PV interconnections without an incentive.

By the end of 2017, the cumulative total DG capacity (all technologies) on the APS system is expected to be at least 725 MW-AC, of which 165.3 MW-AC of this is non-incented PV interconnections.

# **IV. Program Administration**

## **A. Distributed Energy Administration Plan (DEAP)**

The DEAP is a master program administration guideline that APS posts on its public website at [aps.com/renewables](http://aps.com/renewables). APS has made no changes to the DEAP that was approved in Decision No. 74883 on December 31, 2014.

## **B. Educational outreach**

Under the Educational Outreach budget, APS publicly posts and maintains information about the current status of DG adoption and programs on ArizonaGoesSolar.org. In addition, this budget includes expenses associated with developing and updating RES-attributable educational and program materials that are made available to customers and other public stakeholders through aps.com website updates, bill inserts, and printed matter. APS requests \$100,000 in 2017 to continue funding RES-attributable education and outreach.

## **C. Green Choice program**

APS requests that the Commission approve a one-year extension of the Company's Green Choice program and the associated Green Power Rate Schedules GPS-1, GPS-2, and GPS-3. The Green Choice Program provides customers with the ability to participate in a renewable energy resource program by purchasing electricity generated from renewable resources for their homes and businesses. While APS continues to explore the possibility of replacing or revising its Green Choice Program, the Company proposes to self-certify the renewable energy and RECs provided to customers under this program and, if necessary, data will be made available for independent third-party verification.

## **V. Budget**

The budget for APS's 2017 Plan consists of funding for previously authorized programs including PBI legacy payments, purchased power and revenue requirement costs, prior initiatives currently being implemented, and additional funding for administration and implementation of increased rooftop solar penetration.

On May 24, 2012, the Commission resolved APS's most recent rate case in Decision No. 73183. That Decision impacted the RES program as the Commission reaffirmed that APS can recover, through the RES adjustor, the revenue requirements associated with those APS renewable energy-related capital investments made in compliance with Decision No. 71448.<sup>4</sup> APS may do so until it is specifically authorized to recover those costs in base rates or another adjustor.<sup>5</sup> The Commission has approved several APS-owned capital investments for purposes of compliance with Decision No. 71448, including the AZ Sun Program and the Schools and Government Program.

The total base RES budget in 2017 is \$149.6 million and the five year total for the 2017-2021 Plan is projected to be \$694.7 million, not including any funding offsets.

APS intends to apply several credits and revenue streams to lower total RES adjustor collections needed in 2017 and 2018. Offsets to the 2017 budget (see Exhibit 3A) include \$6.0 million from the System Benefit Charge included in base rates and \$17 million in

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<sup>4</sup> Decision No. 73183, Settlement Agreement, paragraph 8.2.

<sup>5</sup> *Id.*

budget reductions from Production Tax Credit (PTC) funds, rate program revenues, and general reallocation offsets due to variances in power purchase costs, programs completed under budget, and cancelled projects. After applying these funding offsets, the total requested RES adjustor collection for 2017 is \$126.7 million.<sup>6</sup>

### **A. Production tax credits**

Through APS's ownership of its AZ Sun projects, the Company will receive tax credits from the Arizona state production tax credit (PTC) program from 2017 through 2021.<sup>7</sup> Actual PTC amounts will vary each year depending on actual energy production from each eligible project compared to its forecasted annual production, as well as an annually declining credit per MWh produced. PTC credits have already been approved for the Company's Paloma, Cotton Center, Hyder I, Hyder II, Chino Valley, and Foothills facilities, which were placed in service from 2011 to 2014. As shown in Exhibit 3A, the expected revenue requirement offset from available PTC in 2017 is \$7.4 million, compared with \$8 million in 2016. The AZ Sun projects listed above are forecasted to contribute a total of \$26.3 million in revenue offset from PTC between 2017 and 2021.

Consistent with previous plans, APS is using its full annual AZ Sun PTC to offset the cost of the 2017 RES budget.

### **B. Reallocation of program funds**

In prior RES Plans, APS has applied a portion of the Company's unallocated program funds as a direct offset to a given year's budget to reduce the need for additional RES collections.

Additional collected program funds are available for budget offsets due to variances in power purchase costs; programs completed under budget, rollover funds, and canceled projects. Decision No. 75422 (January 19, 2016) directed APS to use \$31.4 million of collected but unallocated funds during 2016. Any remaining 2015 collected but unallocated funds, along with additional collected but unallocated funds in 2016, projected to be \$8.2 million in total, is available to offset the 2017 budget request. APS proposes to apply all of the available funds towards reducing RES adjustor collections for the 2017 budget—in part to minimize year-over-year budget impacts. Any additional balance in the Company's unallocated program funds will be applied in subsequent program years.

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<sup>6</sup> See Exhibit 3A.

<sup>7</sup> 2010 Senate Bill 1254 established Arizona's Production Tax Credit.

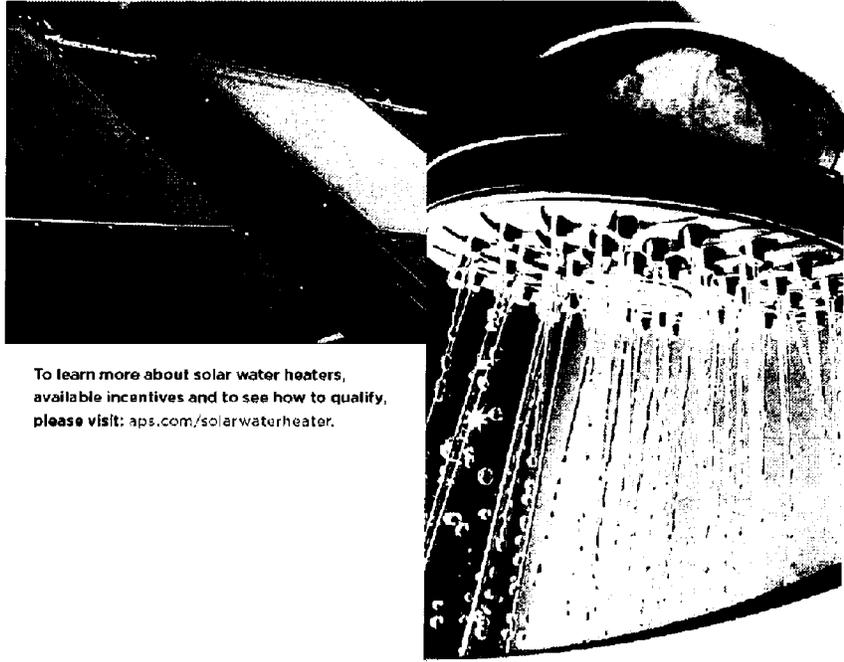
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# Appendix

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## How do solar water heaters work?

There are different types of systems, but the basics are the same. When sunlight hits the solar collector on your roof, it warms the water or a transfer fluid inside. That water or fluid is then piped to a holding tank to either transfer its heat or as water ready to use. The system will automatically circulate the water or liquid that's not used back through the system, keeping it hot. The result: your solar system provides hot water for you just like your current water heater. It will even work on cloudy days using the electrical back-up so you're always producing hot water.



To learn more about solar water heaters, available incentives and to see how to qualify, please visit: [aps.com/solarwaterheater](http://aps.com/solarwaterheater).

## Save energy and money

WITH A SOLAR WATER HEATER

This brochure provides information about solar water heating. It does not specify brand information, and is not intended to replace the manufacturer's use and care manual, which is the primary source of information for maintenance, cleaning, and safety of your solar water heater.

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

#### Resources:

Energy Saver  
[energy.gov/energysaver](http://energy.gov/energysaver)  
Energy Star  
[energystar.gov](http://energystar.gov)



11-2015-0022

# Install a solar water heater and save

Today's solar water-heating systems offer reliable and economical performance and an environmentally clean and highly effective way to heat your home's water.

## WHAT TO CONSIDER

Make sure you purchase a solar water-heating system that includes a storage water heater as part of the system package. It's recommended to get at least three bids from licensed contractors and when you are comparing bids, inquire about:

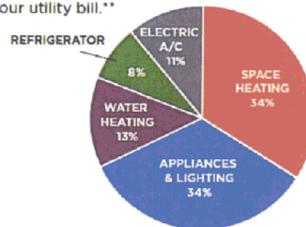
- Number of years in business
- Types of warranties offered
- Number of successful installations
- Customer references

With more than 300 days of sunshine in Arizona, it makes sense to harness the sun's energy to reduce water heating costs. And, when you combine an average APS incentive of \$800\*, with federal and state tax credits, your investment will quickly pay for itself and help you save on water heating costs for years to come.

## DID YOU KNOW?

### How we use energy in our homes

Water heating is the third largest expense in your home and typically accounts for about 13% of your utility bill.\*\*



### Cost

\$400-\$600 is the average household cost for water heating each year.\*\*

### Age

Approximately 27 million households in the US have a water heater that is more than 10 years old.

The average water heater lasts 10-15 years, and when it fails, it can leave you in a mess.

## TIPS FOR REDUCING WATER HEATING BILLS

- Consider a solar water heater
- Use less water
- Install low-flow faucets & showerheads
- Purchase Energy Star® appliances
- Wash your clothes in cold water
- Repair any leaks
- Follow manufacturer recommendations for maintenance

### Average hot water use

64 gallons of water is used by the average household each day.\*\*



\*\$817, average APS incentive paid to APS customers in 2015.  
\*\* Based on the national averages.



### ENERGY STAR® Homes

- SAVINGS: APS ENERGY STAR Homes are at least 20% more efficient than typical new homes; saving you up to \$300 a year.
- GET STARTED: To find an APS ENERGY STAR builder, go to [aps.com/newhomes](http://aps.com/newhomes).



### Energy Analyzer

- SAVINGS: Find customized energy saving recommendations and tips for your home with a quick online survey.
- GET STARTED: Go to [aps.com/ea](http://aps.com/ea) for your customized savings report.

### Energy-efficient AC

- SAVINGS: Save energy—New AC systems are 30-40% more efficient than units installed 15 years ago.
- REBATE: \$245 rebate available on quality installations of new, high-efficiency AC units when performed by a participating contractor.
- GET STARTED: Go to [aps.com/ac](http://aps.com/ac).



### Install Solar

- SAVINGS: Harness the sun's energy to reduce water heating costs.
- REBATE: APS incentives and tax credits help make solar a more affordable energy option.
- GET STARTED: To learn more and see how to qualify, please visit [aps.com/solarwaterheater](http://aps.com/solarwaterheater).



Saving Energy and Money in Your Home





**Energy-efficient Lighting**

- **SAVINGS:** Save up to \$80 over the life of every LED you install.
- **GET STARTED:** Switch to LEDs and get instant discounts at retailers. Visit [aps.com/lighting](http://aps.com/lighting).



**Duct Test & Repair**

- **SAVINGS:** Save up to \$200 a year on your energy bill by fixing leaky duct systems.
- **REBATE:** Rebates of up to \$400 per system to test and repair leaky ducts.
- **GET STARTED:** Go to [aps.com/ductrepair](http://aps.com/ductrepair) to find a list of participating contractors.

**Advanced AC Tune-up**

- **SAVINGS:** Increase the life of your unit by up to 10%.
- **REBATE:** Get a \$95 rebate per system when a participating contractor performs your tune-up.
- **GET STARTED:** Visit [aps.com/tuneup](http://aps.com/tuneup) to learn more and find a participating contractor.



**Efficient Pools**

- **SAVINGS:** Save up to \$150 a year on pool energy costs.
- **REBATE:** Rebates of \$100 on variable-speed pool pumps.
- **GET STARTED:** Go to [aps.com/pools](http://aps.com/pools) to find a list of participating retailers.



**Home Energy Checkup**

- **SAVINGS:** Learn ways to save up to 30% on your annual energy bill with our APS Home Performance with ENERGY STAR program.
- **REBATE:** Start with our 5-min. Energy Analyzer survey to see if your home can benefit from a Home Performance with ENERGY STAR checkup. You can gain access to over \$1,000 in APS rebates.
- **GET STARTED:** Visit [aps.com/ea](http://aps.com/ea) to take our 5-min. survey.

Please go to [aps.com/save](http://aps.com/save) for more information and other ways to save energy and money.

Programs funded by APS customers and approved by the Arizona Corporation Commission. ACP#00027401 2/5/10/04024

## TIME FOR A NEW WATER HEATER?

Consider a solar water heater and you could reduce water heating costs in your home.

Learn more at:  
[aps.com/solarwaterheater](http://aps.com/solarwaterheater)



## TIME FOR A NEW WATER HEATER?

Consider a solar water heater and you could reduce water heating costs in your home.

Learn more at:  
[aps.com/solarwaterheater](http://aps.com/solarwaterheater)



### PLANS FIT FOR YOUR LIFESTYLE

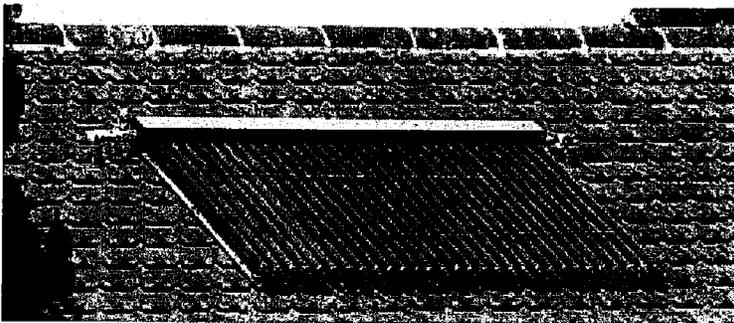
Did you know you have the option of several different service plans that can help you control your energy costs? Our time of use plans offer on-peak and off-peak hours so that you can pick the one that's most suitable for your lifestyle.

With our Time Advantage 7pm-noon plan, off-peak hours are from 7pm-noon, Monday through Friday, during which electricity is billed at a lower rate. If you use the most energy during these off-peak hours, this plan would be a great fit, allowing you to maximize your energy savings. And if you stagger the use of your major appliances during on-peak hours, you may want to consider our Combined Advantage 7pm-noon plan.

Please visit [aps.com/compare](http://aps.com/compare) to see which plan best meets your needs.

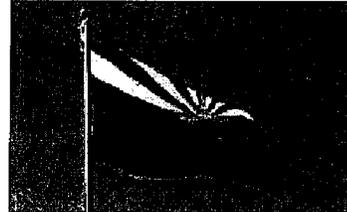
### TURN SUNSHINE INTO SAVINGS

In Arizona, we enjoy more than 300 days of sunshine a year, and harnessing such an abundant source of energy makes good economic sense. Take water heaters, for example. Water heating represents the third largest energy expense in your home. And that makes your water heater a prime candidate for a money-saving solar upgrade.



According to the US Department of Energy, replacing your old water heater with one that is solar can reduce your water-heating costs by up to 80 percent. And the savings really add up since you can qualify for our incentive, plus federal and state tax credits. It's an environmentally friendly investment that will pay for itself and help you save for years to come.

To learn more about solar water heaters and renewable energy incentives, please visit [aps.com/solarwaterheater](http://aps.com/solarwaterheater).



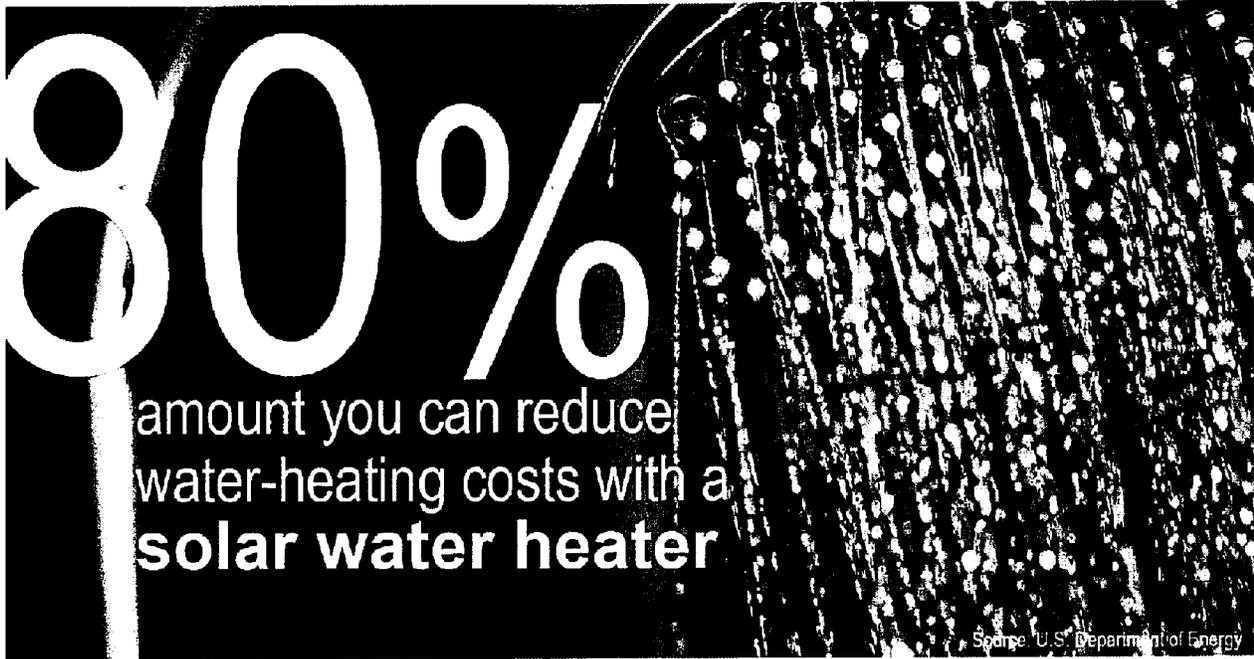
### HAPPY BIRTHDAY, ARIZONA!

Arizona turns 104 this month, and we have been with her since the beginning. In fact, our roots reach back before statehood. We got our start in 1886 as the Phoenix Illuminating Gas and Electric Company. And as Arizona has grown into a major economic force over the past century, we've grown right along with it.

As the state's largest public utility, we are continuing to build a strong, reliable energy infrastructure that is necessary for economic growth throughout our state. Because a strong energy infrastructure is key to attracting the industries that will define Arizona's economy for years to come.

Last year alone we spent \$1 billion on goods and services from Arizona companies, including \$300 million paid to woman- and minority-owned businesses. All told, we contribute \$3.4 billion annually to the Arizona economy through jobs and investments.

To learn more about the future of Arizona, please visit [aps.com/next](http://aps.com/next).



80%

amount you can reduce  
water-heating costs with a  
**solar water heater**

Source: U.S. Department of Energy

Exhibit 1A: APS 2017 - 2021 RES Program Summary

Line No.	APS RES Targets (MWh)	2017	2018	2019	2020	2021
1	APS Estimated Retail Sales	30,479,230	30,993,789	31,474,493	31,856,516	32,407,923
2	APS RES Target - % of Retail Sales	7.0%	8.0%	9.0%	10.0%	11.0%
3	<b>APS Total RES Requirement</b>	<b>2,133,546</b>	<b>2,479,503</b>	<b>2,832,704</b>	<b>3,185,652</b>	<b>3,564,872</b>
4						
5	<b>RES Generation Target</b>	<b>1,493,482</b>	<b>1,735,652</b>	<b>1,982,893</b>	<b>2,229,956</b>	<b>2,495,410</b>
6						
7	Distributed Energy % of RES Requirement	30%	30%	30%	30%	30%
8	<b>Distributed Energy Requirement</b>	<b>640,064</b>	<b>743,851</b>	<b>849,811</b>	<b>955,695</b>	<b>1,069,461</b>
9	Residential Distributed Energy (50%)	320,032	371,925	424,907	477,848	534,731
10	Non-Residential Distributed Energy (40%)	256,026	297,540	339,925	382,278	427,785
11	Wholesale Distributed Energy (10%) <sup>1</sup>	64,006	74,385	84,981	95,570	106,946
12						
13						
14	<b>Renewable Generation (MWh)</b>					
15	RES Generation Target	1,493,482	1,735,652	1,982,893	2,229,956	2,495,410
16						
17	Existing/Planned Generation Owned/Contracted	2,622,717	2,608,754	2,594,619	2,588,392	2,565,387
18	<b>Energy Applied To/(Withdrawn From) APS Bank for RES (line 18 - line 16)</b>	<b>1,129,235</b>	<b>873,100</b>	<b>611,726</b>	<b>358,436</b>	<b>69,977</b>
19						
20	<b>Customer Sited Distributed Energy (MWh)</b>					
21	RES Distributed Energy Requirement	640,064	743,851	849,811	955,695	1,069,461
22						
23	Estimated Existing Distributed Energy <sup>2</sup>	805,163	815,005	825,067	835,125	845,973
24						
25	<b>Energy Applied To/(Withdrawn From) APS Bank for RES (line 25 - line 23)</b>	<b>165,099</b>	<b>71,154</b>	<b>(24,744)</b>	<b>(120,570)</b>	<b>(223,489)</b>
26						
27	Non-Incented DE Installations	442,922	665,779	888,537	1,111,295	1,334,052
28						
29	<b>Total RES Energy (MWh)</b>					
30	Total RES Requirement	2,133,546	2,479,503	2,832,704	3,185,652	3,564,872
31						
32	Total Expected RES Production (line 18 + line 25)	3,427,880	3,423,759	3,419,686	3,423,518	3,411,360
33						
34	<b>Energy Applied To/(Withdrawn From) APS Bank for RES (line 34 - line 32)</b>	<b>1,294,334</b>	<b>944,256</b>	<b>586,982</b>	<b>237,866</b>	<b>(153,512)</b>
35						
36	Non-Incented DE Installations	442,922	665,779	888,537	1,111,295	1,334,052
37						
38	<b>APS RES Budget Summary (\$ M's)</b>					
39	Total Renewable Generation <sup>3</sup>	\$ 94.8	\$ 82.1	\$ 82.0	\$ 82.2	\$ 82.2
40	Total Distributed Energy <sup>3</sup>	54.9	54.7	54.3	54.0	53.8
41	<b>Base RES Program Budget</b>	<b>\$ 149.6</b>	<b>\$ 136.8</b>	<b>\$ 136.2</b>	<b>\$ 136.1</b>	<b>\$ 136.0</b>
42	Base Rates	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)
43	Production Tax Credits	(7.4)	(6.9)	(5.9)	(4.4)	(1.7)
44	Estimated Green Choice Revenue Credit	(1.4)	(1.4)	(1.4)	(1.4)	(1.4)
45	Previous Years Rollover Funds and Other Credits	(8.2)	-	-	-	-
46	<b>RES Adjustor Collection<sup>4</sup></b>	<b>\$ 126.7</b>	<b>\$ 122.5</b>	<b>\$ 122.9</b>	<b>\$ 124.3</b>	<b>\$ 126.9</b>
47						
48						
49						

Notes:

- <sup>1</sup> Per AAC R14-2-1805.
- <sup>2</sup> Does not include non-incentive installations from residential and non-residential energy sources towards compliance. Non-incentive installations are defined as installations made by customers without taking a direct cash incentive and without transferring REC ownership to APS.
- <sup>3</sup> To be adjusted, pending the Commission's decision in the Company's 2017 rate case application.
- <sup>4</sup> See Exhibit 1B for RES Adjustor Schedule.

### Exhibit 1B: RES Adjustor Schedule

	Residential	XS Commercial (<20 kW)	XS/Small Commercial (20-100kW)	Medium Commercial (100-400 kW)	Large Commercial (400-3,000 kW)	Industrial (>3,000 kW)
<b>2017 Charge/Cap</b> (Non-DG Customers)	\$4.79	\$178.09	\$0.011987			
<b>2017 Average</b> (DG Customers)	\$4.36	Cap: \$178.09 Floor: \$10.01	Cap: \$178.09 Floor: \$50.05	\$299.68	\$599.35	\$3,895.00

Exhibit 2A: Targeted Resources

Line No.	Targeted Generation Resources: 2	Ownership <sup>1</sup>	Actual / Expected Completion	2017-2021 Total MWac	2017	2018	2019	2020	2021	Total
1	Solar:									
2	Ajo	3rd Party PPA	Online	4.5	10,204	10,153	10,102	10,080	10,001	50,541
3	Prescott	3rd Party PPA	Online	10	24,344	24,101	23,860	23,685	23,385	119,375
4	Badger	3rd Party PPA	Online	15	39,338	39,056	38,773	38,545	38,209	193,920
5	Gilispie	3rd Party PPA	Online	15	42,006	41,706	41,587	41,500	41,172	208,061
6	Saddle Mountain	3rd Party PPA	Online	15	33,981	33,589	33,420	33,245	32,887	167,202
7	Sollana CSP	3rd Party PPA	Online	250	920,420	920,420	920,420	923,295	920,420	4,604,975
8	Paloma	APS/AZ Sun	Online	17	40,319	40,036	39,756	39,606	39,201	199,916
9	Hyder I	APS/AZ Sun	Online	16	39,862	39,563	39,464	39,383	39,071	197,443
10	Cotton Center	APS/AZ Sun	Online	17	45,213	45,122	45,032	44,852	44,652	225,298
11	Chino Valley	APS/AZ Sun	Online	19	47,267	47,030	46,795	46,561	46,328	233,991
12	Foothills I/II	APS/AZ Sun	Online	35	110,368	109,816	109,267	109,064	108,177	546,693
13	Hyder II	APS/AZ Sun	Online	14	45,255	45,029	44,804	44,713	44,357	224,158
14	Gila Bend	APS/AZ Sun	Online	32	107,344	106,808	106,274	106,075	105,214	531,716
15	Luke AFB	APS/AZ Sun	Online	10	34,603	34,430	34,258	34,187	33,916	171,394
16	Desert Star	APS/AZ Sun	Online	10	35,283	35,106	34,931	34,855	34,582	174,758
17	Small Solar Sites	APS	Online	4.6	9,953	9,953	9,953	9,953	9,953	49,766
18	Solar Partner Program	APS	2015	9.5	16,201	16,039	15,799	15,483	15,095	78,617
19	Red Rock	APS	2017	40	79,213	78,817	78,423	78,282	77,641	382,356
20										
21	Wind:									
22	Aragonne Mesa	3rd Party PPA	Online	90	269,239	269,239	269,239	270,740	269,239	1,347,196
23	High Lanesone	3rd Party PPA	Online	100	299,592	299,592	299,592	300,495	299,592	1,498,863
24	Perrin Ranch	3rd Party PPA	Online	99	226,416	226,416	226,416	227,074	226,416	1,132,739
25										
26	Geothermal:									
27	Saltan Sea/CE Turco	3rd Party PPA	Online	10	63,419	63,419	63,419	63,617	63,419	317,293
28										
29	Biomass/Biogas:									
30	Snowflake	3rd Party PPA	Online	14	42,799	32,925	22,937	13,186	2,160	114,007
31	Sexton (Glendale Landfill)	3rd Party PPA	Online	2.9	17,538	17,538	17,538	17,586	17,538	87,738
32	Northwest Regional Landfill Gas	3rd Party PPA	Online	3.2	22,560	22,560	22,560	22,622	22,560	112,862
33										
34										
35	<b>Total Targeted Generation</b>			<b>682</b>	<b>2,622,717</b>	<b>2,608,754</b>	<b>2,594,619</b>	<b>2,589,392</b>	<b>2,565,387</b>	<b>12,979,869</b>
36										
37	Targeted Distributed Energy Resources: 3									
38	Residential:									
39	UFI Installations	Customer-Sited DE	Various	Various	286,245	286,245	286,245	286,245	286,245	1,431,225
40	Non-Incentive Installations <sup>4</sup>	Customer-Sited DE	Various	Various	602,848	813,196	1,023,544	1,233,892	1,444,240	5,117,721
41	Flagstaff Community Power Project		0.4		720	720	720	720	720	3,500
42										
43										
44	<b>Subtotal Residential</b>				<b>889,813</b>	<b>1,100,161</b>	<b>1,310,509</b>	<b>1,520,857</b>	<b>1,731,205</b>	<b>6,552,546</b>
45	Non-Residential:									
46	UFI Installations	Customer-Sited DE	Various	Various	39,912	39,912	39,912	39,912	39,912	199,562
47	PBI Installations	Customer-Sited DE	Various	Various	220,588	220,588	220,588	220,588	220,588	1,102,940
48	Non-Incentive Installations <sup>4</sup>	Customer-Sited DE	Various	Various	62,931	75,341	87,251	100,160	112,570	436,753
49	DE RFP	Customer-Sited DE	Online	35	76,129	75,863	75,597	75,333	75,069	377,991
50	Schools & Government (3rd-Party Owned)	Customer-Sited DE	Various	45	75,578	75,578	75,578	75,578	75,578	377,888
51	Schools & Government (Utility-Owned)	Customer-Sited DE	Various	13	40,508	40,257	39,959	39,703	39,438	196,854
52	Flagstaff Community Power Project	APS	Online	0.9	1,477	1,477	1,477	1,477	1,477	7,385
53	Wholesale DE	3rd Party PPA	Online	NA	64,005	74,385	84,981	95,570	105,946	425,868
54										
55										
56										
57	<b>Subtotal Non-Residential</b>				<b>561,129</b>	<b>603,381</b>	<b>625,853</b>	<b>646,321</b>	<b>671,578</b>	<b>3,130,262</b>
58	<b>Total Targeted DE</b>				<b>1,470,942</b>	<b>1,703,542</b>	<b>1,936,362</b>	<b>2,169,178</b>	<b>2,402,783</b>	<b>9,682,808</b>
59										

Notes:

- <sup>1</sup> All utility-owned Third Party projects are developed through a competitive RFP process, and all DE systems are built independently by Third Party developers and installers.
- <sup>2</sup> Reported as incremental production (non-annualized).
- <sup>3</sup> Reported as annualized production.
- <sup>4</sup> Non-Incentive Installations are defined as installations made by customers without taking a direct cash incentive and without transferring REC ownership to APS.

## Exhibit 2B: Distributed Energy Compliance Table (MWh) <sup>1</sup>

This exhibit represents actual and forecasted 2015-2021 RES DE compliance totals compared to what APS's compliance position would be if the Company were allowed to count independent, customer installations towards its RES compliance reporting. The non-incented installations shown below represent actual non-incented installations to date for 2015 and 2016, as well as forecasted DE customer growth absent any new incentive program funding for 2017-2021.

Line No	2015	2016	2017	2018	2019	2020	2021	Line No
<b>Residential DE (MWh)</b>								
1								1
2								2
3	286,965	286,965	286,965	286,965	286,965	286,965	286,965	3
4	208,561	392,401	602,848	813,196	1,023,544	1,233,892	1,444,240	4
5	495,527	679,366	889,813	1,100,161	1,310,509	1,520,857	1,731,205	5
6								6
<b>Non-Residential DE (MWh)</b>								
7								7
8								8
9	473,370	506,713	518,198	528,040	538,102	548,160	559,008	9
10	38,111	50,521	62,931	75,341	87,751	100,160	112,570	10
11	511,481	557,234	581,129	603,381	625,853	648,321	671,578	11
12								12
<b>Total DE (MWh)</b>								
13								13
14								14
15	760,335	793,678	805,163	815,005	825,068	835,126	845,973	15
16	246,672	442,922	665,779	888,537	1,111,295	1,334,052	1,556,810	16
17	1,007,008	1,236,600	1,470,942	1,703,542	1,936,362	2,169,178	2,402,783	17
18								18
<b>RES DE Requirements (MWh)</b>								
19								19
20	419,233	542,874	640,064	743,851	849,811	955,695	1,069,461	20
	209,617	271,437	320,032	371,925	424,906	477,848	534,731	
21	209,617	271,437	320,032	371,925	424,906	477,848	534,731	21

### Notes:

- <sup>1</sup> If APS were allowed to count non-incented installations towards its RES DE compliance requirements, APS anticipates total installations projected to be installed through 2017 would:
  - 1) advance residential compliance from 2017 to 2020,
  - 2) have no impact on non-residential compliance, and advance non-residential compliance from 2017 to 2021
  - 3) advance overall DE compliance from 2018 to 2020.

If APS were allowed to count non-incented installations towards its RES DE compliance requirements, APS anticipates total installations projected to be installed through 2020 would:

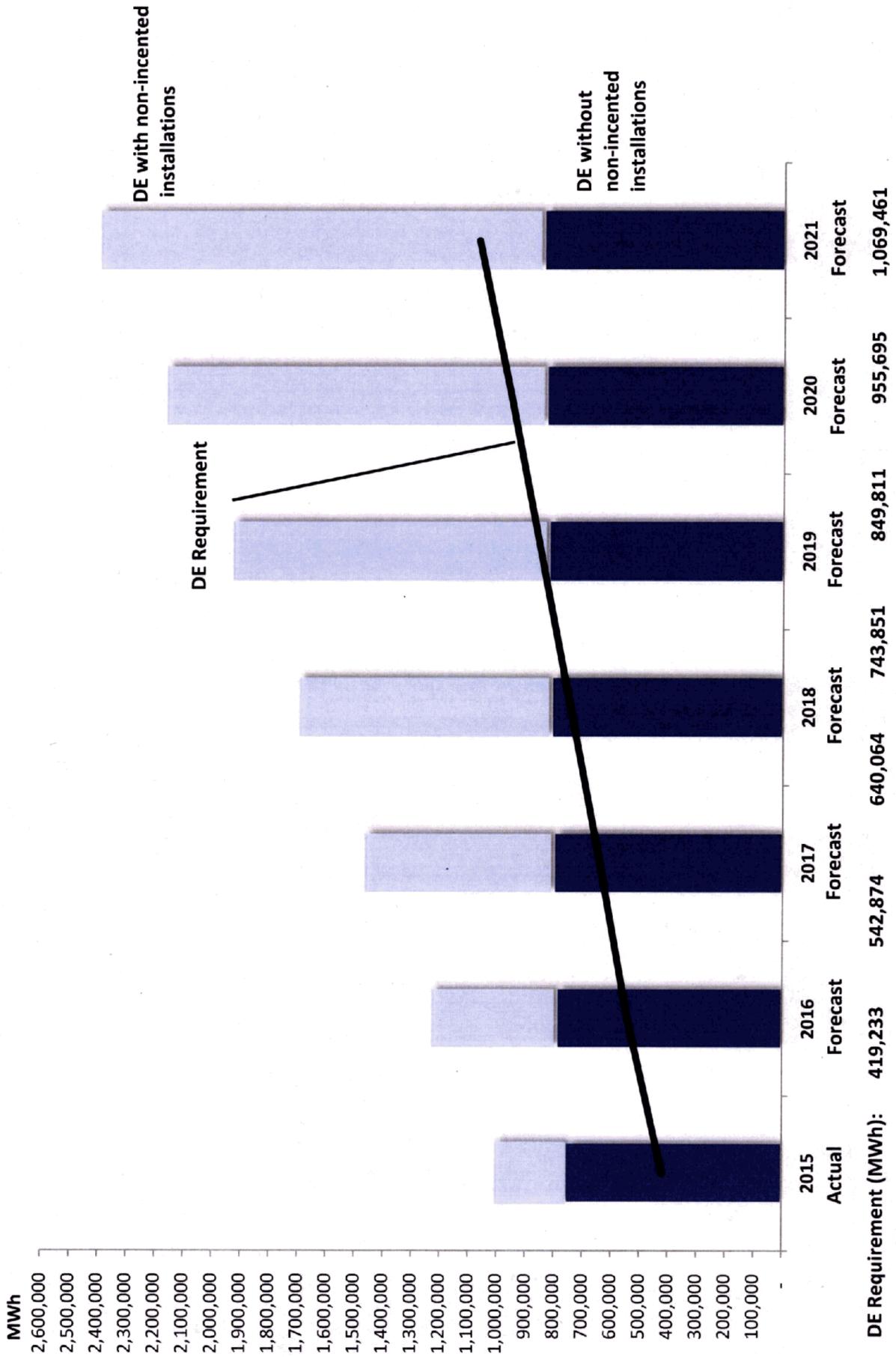
- 1) advance residential compliance from 2017 to 2024,
- 2) advance non-residential compliance from 2021 to 2022, and
- 3) advance overall DE compliance from 2019 to 2025.

<sup>2</sup> Includes UFI DE and Flagstaff Community Power Project.

<sup>3</sup> Non-incented installations defined as installs made by customers without taking a direct cash incentive and without transferring REC ownership to APS.

<sup>4</sup> Includes UFI, PBI, and Wholesale DE programs.

# Exhibit 2C: Distributed Energy Compliance Graph



# Exhibit 3A: 2017 RES IP Summary Budget

Line No.	2017	2018	2019	2020	2021	Total
<b>Renewable Generation</b>						
<b>Renewable Generation Contracts and Operation and Maintenance</b>						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
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12						
13						
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31						
32						
33						
34						
35						
36						
<b>Customer Sited Distributed Energy</b>						
<b>Existing Contracts and Commitments</b>						
1						
2						
3						
4						
5						
6						
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12						
13						
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31						
32						
33						
34						
35						
36						
<b>Non-Energy Distributed Energy Costs</b>						
1						
2						
3						
4						
5						
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7						
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12						
13						
14						
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26						
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32						
33						
34						
35						
36						
<b>Customer Sited DE (line 16 + line 25)</b>						
1						
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9						
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12						
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33						
34						
35						
36						
<b>Offsets to Base Budget</b>						
1						
2						
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10						
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36						

**Notes:**

- <sup>1</sup> To be adjusted, pending the Commission's decision in the Company's 2017 rate case application.
- <sup>2</sup> Includes RES costs totaling approximately \$0.2M for Sexton (Glendale Landfill) PPA for 2014-2017.
- <sup>3</sup> Third-party owned portion of the current 2011, 2012, and expanded Schools and Government Programs.
- <sup>4</sup> APS owned portion of the 2011 and 2012 School and Government Programs.
- <sup>5</sup> Includes revenue requirements for the production metering as required by Decision No 72737.

**Exhibit 3B: Targeted RES Resource Costs (in \$Ms)**

COMPETITIVELY CONFIDENTIAL<sup>1</sup>  
Projected RES Cost per Year <sup>1,2</sup>

Line No.	Targeted Generation Resources: <sup>1</sup>	Ownership	2017	2018	2019	2020	2021	Total	Line No.
1	<b>Solar:</b>								1
2	Ajo	3rd Party PPA						2.2	2
3	Prescott	3rd Party PPA						4.1	3
4	Badger	3rd Party PPA						2.1	4
5	Gillespie	3rd Party PPA						3.4	5
6	Saddle Mountain	3rd Party PPA						2.5	6
7	Solana CSP	3rd Party PPA						155.8	7
8	Chino Valley	APS						35.6	8
9	Foothills I/II	APS						58.5	9
10	Hyder II	APS						23.0	10
11	Gila Bend	APS						49.3	11
12	Luke AFB	APS						14.6	12
13	Desert Star	APS						14.2	13
14									14
15									15
16	<b>Wind:</b>								16
17	Aragonne Mesa	3rd Party PPA						16.4	17
18	High Lonesome	3rd Party PPA						-	18
19	Perrin Ranch	3rd Party PPA						12.1	19
20									20
21	<b>Geothermal:</b>								21
22	Salton Sea/CE Turbo	3rd Party PPA						3.1	22
23									23
24	<b>Biomass/Biogas:</b>								24
25	Snowflake <sup>3</sup>	3rd Party PPA						17.9	25
26	Sexton (Glendale Landfill) <sup>4</sup>	3rd Party PPA						0.1	26
27	Northwest Regional Landfill Gas	3rd Party PPA						0.4	27
28	<b>Subtotal Targeted Generation<sup>4</sup></b>		<b>\$ 93.2</b>	<b>\$ 80.5</b>	<b>\$ 80.4</b>	<b>\$ 80.6</b>	<b>\$ 80.6</b>	<b>\$ 415.3</b>	28
29									29
30	<b>Targeted and Expected Distributed Energy Resources:</b>								30
31									31
32	<b>Non-Residential:</b>								32
33	PBI Installations	Customer-Sited DE	\$ 23.9	\$ 23.9	\$ 23.2	\$ 22.8	\$ 22.1	\$ 115.8	33
34	DE RFP	Customer-Sited DE	5.4	4.8	4.8	4.6	4.7	24.3	34
35	Schools & Government (3rd-Party Owned)	Customer-Sited DE	7.9	7.9	7.9	7.9	7.9	39.3	35
36	Schools & Government (Utility-Owned)	APS	4.7	4.6	4.5	4.4	4.4	22.6	36
37	Flagstaff Community Power Project	APS	0.2	0.2	0.2	0.2	0.2	1.0	37
38									38
39	<b>SubTotal Non-Residential Distributed Energy (line 33 : line 37)</b>		<b>\$ 42.0</b>	<b>\$ 41.3</b>	<b>\$ 40.5</b>	<b>\$ 39.9</b>	<b>\$ 39.2</b>	<b>\$ 203.0</b>	39
40									40
41	<b>Total Targeted Energy Costs<sup>4</sup> (line 28 + line 39)</b>		<b>\$ 135.2</b>	<b>\$ 121.8</b>	<b>\$ 120.9</b>	<b>\$ 120.5</b>	<b>\$ 119.8</b>	<b>\$ 618.3</b>	41

**Notes:**

- <sup>1</sup> Redacted due to the competitively confidential nature of the information.
- <sup>2</sup> Expected costs of Wholesale DE included in costs associated with Snowflake White Mountain Power, and not included in DE section.
- <sup>3</sup> Includes RES costs totaling approximately \$0.1M for Sexton (Glendale Landfill) PPA for 2016-2020.

### Exhibit 3C: Lifetime Authorization Production Based Incentive status (\$M)

Line No.	Year	Authorization Description	PBI Lifetime Authorization:
1			
2			
3	2008 <sup>1,2</sup>	\$ 250.0	DE RFP Lifetime Budget
4	2009 <sup>3</sup>	220.0	Standard PBI Lifetime Budget
5	2010 <sup>4</sup>	100.0	Standard PBI Lifetime Budget
6	2011 <sup>5</sup>	100.0	Standard PBI Lifetime Budget (\$73M), School and Government PBI (\$27M)
7	2012 <sup>6</sup>	95.8	Standard PBI Lifetime Budget (\$30M), School and Government PBI (\$65.8M)
8	2013 <sup>7</sup>	6.0	Expanded School and Government PBI
9		<b>\$ 771.8</b>	<b>APS's Approved Lifetime PBI Authorization</b>
10			
11			
12			
13			
14			
15			
16			
<b>Retirement of Authorizations from Completed Programs:</b>			
12		\$ (74.9)	DE RFP <sup>8</sup>
13		(45.1)	Standard PBI (2009 - 2012)
14		(31.4)	School & Government PBI (2011-2012)
15		1.8	Retained for Expanded School and Government PBI <sup>9</sup>
16		<b>\$ 622.2</b>	<b>Total Remaining Lifetime PBI Authorization</b>

Line No.	2017	2018	2019	2020	2021
17					
18					
19	Total PBI Commitment	\$ 622.2	\$ 622.2	\$ 622.2	\$ 622.2
20	Cumulative PBI Incentive Payments	167.3	204.5	241.0	277.5
21	Annual PBI Payment (Projected)	37.2	36.6	36.4	35.0
22	Remaining PBI Commitment	\$ 417.7	\$ 381.2	\$ 309.2	\$ 274.1

**Notes:**

- <sup>1</sup> Pursuant to Decision No. 71459, APS was authorized a total lifetime PBI Budget Authorization cap of \$250 million for the DE RFP.
- <sup>2</sup> Pursuant to Decision No. 72022, APS was authorized to commit \$25 million of its DE RFP authorization to the Innovative Technologies Program.
- <sup>3</sup> Pursuant to Decision No. 71254, the total lifetime PBI budget through and including 2009 is \$220 million of total contract commitments.
- <sup>4</sup> Pursuant to Decision No. 71459, APS was authorized an additional \$100 million per year lifetime commitment authorization.
- <sup>5</sup> Pursuant to Decision Nos. 72022 and 72174, in 2011, APS committed \$27 million of its Lifetime PBI Budget Authorization towards the Schools and Government program.
- <sup>6</sup> Pursuant to Decision No. 72737, \$30 million allocated to non-residential PBI and \$65.8 million to 2012 S&G.
- <sup>7</sup> Pursuant to Decision No. 73636, ACC authorized \$6M in new PBI program funds and a shift in \$23.5M of unallocated DE RFP funds to support anticipated 2012 S&G program needs.
- <sup>8</sup> Includes \$25M previously allocated to Innovative Technologies and \$49.9M in project commitment reduction due to cancellation of a portion of the DE RFP program.
- <sup>9</sup> Additional lifetime PBI authorization to complete program approved pursuant to Decision No. 72737.

**Exhibit B**

**Summary of APS 2017 RES**

**Implementation Plan**

## Summary of APS's 2017 Renewable Energy Standard Implementation Plan

Arizona Public Service (APS or Company) is required by the Renewable Energy Standard (RES) to achieve 7.0 percent of retail sales with renewable resources by year-end 2017, increasing annually to 11.0 percent in 2021.

APS's 2017-2021 Renewable Energy Standard (RES) Implementation Plan (Plan) requests funding approval for existing program commitments and deployment of previously authorized programs.

**Budget.** APS expects the total base budget for production-based incentives (PBI) and other Distributed Generation (DG) legacy costs, Power Purchase Agreement (PPA) projects, and APS-owned projects in 2017 to be \$149.6 million, and the total request for the 2017-2021 Plan to be \$694.7 million, not including any funding offsets.

**Distributed Generation.** Through June 20, 2016, 25,043 residential PV grid-tied systems for 165.3 MW-AC and 327 non-residential PV systems for 22.3 MW-AC have been installed across the APS service territory and interconnected to APS's grid without receiving direct cash incentives. APS expects to be more than 95% compliant with the 2017 incremental residential goal; however, because the Company cannot count non-incented rooftop solar installations toward compliance, APS requests a full permanent waiver of the residential distributed energy requirement for 2017. APS continues to see historic rates of solar PV interconnections without an incentive, but the DG compliance forecast only includes RECs associated with installations that received an incentive.

**Interconnection Application Volume.** APS continues to experience record-high monthly application rates for non-incented residential PV grid-tied generating facilities during 2016. In June 2016, the Company received more than 1,700 residential interconnection requests, which is the most ever received by APS in a single month. The application rate for January to June 2016 was 43 percent higher than the same period in 2015, while residential solar capacity installed from January through June 2016 was more than double that installed during the same period in 2015. With the high volume of interconnection requests comes increased activity in the areas of application review and meter installation, and our RES budget request of \$12.8 million for DG program administration and implementation reflects the current market reality.

**Green Choice Program.** While APS continues to explore the possibility of replacing or revising its Green Choice Program, the Company proposes to self-certify the renewable energy and RECs provided to customers under this program and, if necessary, data will be made available for independent third-party verification.

**Solar Water Heating Program.** Consistent with Decision No. 75422 approved on January 19, 2016, APS is not requesting new funding for solar water heating (SWH) resources in the 2017 Plan. The Company continues to market the solar water heating incentive program and will disburse incentives for projects submitted in 2016.

**Exhibit C**

**PowerPoint Summary of**

**APS 2017 RES**

**Implementation Plan**

**Arizona Public Service Company**

**2017-2021 Renewable Energy Standard  
Implementation Plan**

**July 1, 2016**





## **2017 RES Implementation Plan Overview**

- APS requests a \$149.6M budget (\$126.7M through RES adjustor) to meet prior commitments, manage on-going programs and increase staffing to handle interconnection requests
- APS continues to experience record-high monthly application rates for residential PV grid-tied generating facilities during 2016; more than 1,700 applications in June 2016
- Requested budget reflects costs to increase interconnection staffing and upgrade interconnection software to improve customer service



## **Distributed Generation**

- Based on a projected shortfall of residential renewable energy credits needed to meet the incremental residential DG compliance target, the Company requests a full permanent waiver of the residential DG carve-out requirement in 2017
- Counting only incented PV grid-tied DG resources, APS expects to be in compliance with non-residential energy RES targets until 2021 and residential energy RES targets until Dec 2017
- As of June 20, 2016, 25,043 residential PV grid-tied systems have been interconnected to APS's grid without receiving an incentive, while 23,584 residential PV grid-tied systems have been installed in APS's service territory with an incentive



## **Other RES Programs**

- APS proposes to self-certify Green Choice Program RECs while making Program records and data available for independent third-party verification if necessary
- APS is not seeking authorization for an extension of the existing solar water heating incentive program
- APS requests \$100,000 in 2017 to continue funding RES-attributable education and outreach

**Exhibit D**  
**Proposed**  
**Adjustment Schedule REAC-1**





**ADJUSTMENT SCHEDULE REAC-1  
RENEWABLE ENERGY STANDARD**

Rates Section C. (Cont.)

Residential Customers <sup>1</sup>	\$4.36	Flat charge per month
Non-residential Customers:		
Extra Small <sup>2</sup>	\$10.01 \$178.09	Minimum charge per month Surcharge cap
Small <sup>2</sup>	\$50.05 \$178.09	Minimum charge per month Surcharge cap
Medium <sup>1</sup>	\$251.83	Flat charge per month
Large <sup>1</sup>	\$520.35	Flat charge per month
Extra Large <sup>1</sup>	\$3895.00	Flat charge per month

Notes:

1. The billed amount for a flat charge per month will be the stated charge and will not include the kWh charge under Section A.
2. The billed amount for extra small and small non-residential customers will be the kWh charge under section A subject to the minimum charges and surcharge caps.

NON-RESIDENTIAL CUSTOMER BILLING CATEGORIES

Non-residential customers served under the following "parent" retail rate schedules will be billed under the corresponding surcharge categories.

<u>Surcharge Category</u>	<u>Retail Rate</u>
Extra-small	E-47, E-58, E-59, Contract 12, E-67, E-36M (small option)
Medium	E-32 M, E-32TOU M
Large	E-32 L, E-32TOU L, E-36M (medium option), GS-Schools L
Extra-large	E-34, E-35, E-36 XL

For customers served under the following rate schedules, the surcharge category will be based on the monthly billing demand.

<u>Surcharge Category</u>	<u>Retail Rate</u>	<u>Monthly Billing Demand</u>
Extra-small	E-221, E-221 8T	20 kW and less
Small	E-221, E-221 8T	21 - 100 kW
Medium	E-221, E-221 8T	101- 400 kW
Large	E-221, E-221 8T	> 400 kW
Extra-small	GS-Schools M	20 kW and less
Small	GS-Schools M	21 - 100 kW
Medium	GS-Schools M	> 100 kW
Extra-small	E-20	20 kW and less
Small	E-20	> 20 kW

Exhibit E  
Proposed  
Adjustment Schedule REAC-1  
(Redlined)



ADJUSTMENT SCHEDULE REAC-1  
RENEWABLE ENERGY STANDARD

APPLICATION

The Renewable Energy Standard Adjustment Schedule applies to all retail Standard Offer and Direct Access service. This schedule recovers expenditures approved by the Arizona Corporation Commission ("Commission") in APS's annual Implementation Plan for the Renewable Energy Standard.

The rates will be revised annually, effective on the first billing cycle in January, or as otherwise ordered by the Commission, and will not be prorated. Further information may be found in the Arizona Administrative Code A.A.C. R14-2-1808 and Commission Decision Nos. 73183, 74237, 74883, and 74949.

All provisions of the customer's current applicable rate schedule will apply in addition to this adjustment schedule. Adjustment schedules REAC-1 and DSMAC-1 may be combined and shown on the "Environmental Benefits Surcharge" line of the monthly bill.

RATES

The monthly bill for each service account will be calculated at the following rates and surcharge caps:

A. kWh Charge per kWh  
~~\$0.009355~~  
0.011987

B. Surcharge Caps (per service account per month)

Residential Customers	<del>\$3.744.79</del>
Non-residential Customers:	
Extra Small/Small	<del>\$138.99178.09</del>
Medium	<del>\$233.88299.68</del>
Large	<del>\$467.75599.35</del>
Extra Large	<del>\$3040.003895.00</del>

C. Alternative Surcharge Caps, Flat Charges and Minimum Charges for Certain Customers with Distributed Generation

This section will apply to:

- Customers who installed a distributed generator and received an incentive after July 1, 2012 and
- Customers who installed a distributed generator and interconnected to the APS system after February 1, 2013, regardless of incentive.

Customers who installed a distributed generator prior to July 1, 2012 and those that installed a generator before February 1, 2013, but did not receive an incentive, will be billed according to sections A and B above.



**ADJUSTMENT SCHEDULE REAC-1  
RENEWABLE ENERGY STANDARD**

Rates Section C. (Cont.)

Residential Customers <sup>1</sup>	<del>\$3.414.36</del>	Flat charge per month
Non-residential Customers:		
Extra Small <sup>2</sup>	<del>\$7.8110.01</del> <del>\$138.99178.09</del>	Minimum charge per month Surcharge cap
Small <sup>2</sup>	<del>\$39.0650.05</del> <del>\$138.99178.09</del>	Minimum charge per month Surcharge cap
Medium <sup>1</sup>	<del>\$200.58251.83</del>	Flat charge per month
Large <sup>1</sup>	<del>\$409.03520.35</del>	Flat charge per month
Extra Large <sup>1</sup>	<del>\$3040.003895.00</del>	Flat charge per month

Notes:

1. The billed amount for a flat charge per month will be the stated charge and will not include the kWh charge under Section A.
2. The billed amount for extra small and small non-residential customers will be the kWh charge under section A subject to the minimum charges and surcharge caps.

NON-RESIDENTIAL CUSTOMER BILLING CATEGORIES

Non-residential customers served under the following "parent" retail rate schedules will be billed under the corresponding surcharge categories.

<u>Surcharge Category</u>	<u>Retail Rate</u>
Extra-small	E-47, E-58, E-59, Contract 12, E-67, E-36M (small option)
Medium	E-32 M, E-32TOU M
Large	E-32 L, E-32TOU L, E-36M (medium option), GS-Schools L
Extra-large	E-34, E-35, E-36 XL

For customers served under the following rate schedules, the surcharge category will be based on the monthly billing demand.

<u>Surcharge Category</u>	<u>Retail Rate</u>	<u>Monthly Billing Demand</u>
Extra-small	E-221, E-221 8T	20 kW and less
Small	E-221, E-221 8T	21 - 100 kW
Medium	E-221, E-221 8T	101- 400 kW
Large	E-221, E-221 8T	> 400 kW
Extra-small	GS-Schools M	20 kW and less
Small	GS-Schools M	21 - 100 kW
Medium	GS-Schools M	> 100 kW
Extra-small	E-20	20 kW and less
Small	E-20	> 20 kW

ARIZONA PUBLIC SERVICE COMPANY  
Phoenix, Arizona  
Filed by: Charles A. Miessner  
Title: Manager, Regulation and Pricing  
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