

OPEN MEETING



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MEMORANDUM

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Arizona Corporation Commission

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TO: THE COMMISSION

DOCKETED

FROM: Utilities Division

NOV 3 2014

ARIZONA CORPORATION COMMISSION
DOCKET CONTROL

DATE: November 3, 2014

DOCKETED BY

ORIGINAL

RE: ARIZONA PUBLIC SERVICE COMPANY FOR APPROVAL OF ITS 2014 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN FOR RESET OF RENEWABLE ENERGY ADJUSTOR (DOCKET NO. E-01345A-13-0140)

ARIZONA PUBLIC SERVICE COMPANY FOR APPROVAL OF ITS 2015 RENEWABLE ENERGY STANDARD IMPLEMENTATION FOR RESET OF RENEWABLE ENERGY ADJUSTOR (DOCKET NO. E-01345A-14-0250)

During the Arizona Corporation Commission ("Commission") deliberations concerning the 2014 Arizona Public Service Company ("APS" or "Company") Renewable Energy Standard and Tariff ("REST") Plan, the Commission queried APS about its need for 30 MW of AZ Sun projects to meet its 2009 Rate Case Settlement Agreement ("2009 Settlement") obligations.

In Decision No. 74237, the Commission ordered APS to submit information in this docket by April 15, 2014 "regarding whether it is necessary to continue the final 30 MW phase of AZ Sun in order to comply with the 2009 Settlement Agreement." APS was also required to discuss, in its filing, the "cost-effectiveness of utility-owned generation and third party wholesale purchased power agreements in completing this final 30 MW phase of AZ Sun."

APS docketed its compliance filing in this matter on April 15, 2014. APS said that recent data indicated that "APS does not need all 30 MW of AZ Sun to meet its obligations under the 2009 Settlement to acquire 1,700,000 MWh of new renewable energy resources by December 31, 2015."

APS did request, in its April 15 filing, authorization to construct a 20 MW utility-owned solar PV project that would be located at APS's Redhawk Power Station.

In its April 15, 2014, filing, APS compared the advantages and disadvantages of third party-owned solar projects to those of utility-owned projects. APS asserted that "utility-owned resources often provide significant economic and non-economic benefits for customers over the long-term, and pose less overall risk." APS also asserted that "...utility ownership is a prudent option for reliable, low-cost renewable energy."

On July 28, 2014, APS filed a Supplemental Application, proposing the AZ Sun DG Program. The AZ Sun DG Program is an alternative to the 20 MW Redhawk project. This 20 MW utility-owned DG program would "strategically deploy DG to maximize system benefits."

In this Solar DG Program, APS would install solar DG systems on the residential customer's roof and on the utility side of the meter. APS would use local solar contractors, selected

competitively, to install the Solar DG systems throughout the APS service territory. APS would "rent" the customer rooftop for a \$30 per month bill credit. All of the solar-generated electricity would be resold by APS to its customers.

On October 7, 2014, APS filed a "Project Description of the Proposed AZ Sun Residential Rooftop Project". This filing included program administration details.

Verification of the Need for an Additional 20-30 MW of Solar

In Decision No. 74237, the Commission ordered APS to "submit information to this docket regarding whether it is necessary to continue the final 30 MW phase of AZ Sun in order to comply with the 2009 Settlement Agreement, as well as discuss the cost effectiveness of utility-owned generation and third party wholesale purchased power agreements in completing this final 30 MW phase of AZ Sun."

The Commission further ordered "that when Staff files its recommendations regarding Arizona Public Service Company's 2015 REST Implementation Plan, it shall include a discussion of whether or not Arizona Public Service Company needs to install any portion of the final 30 MW phase of AZ Sun in order to comply with the REST Rules and/or the 2009 Settlement Agreement. These recommendations shall consider the information filed by Arizona Public Service Company and any interested parties regarding the cost effectiveness of utility-owned generation and third party wholesale purchased power agreements in completing this final 30 MW phase of AZ Sun."

In a letter dated August 14, 2014, Commissioner Susan Bitter-Smith asked APS the following question: "Does APS need 20 MW for its Arizona Sun Program in order to meet its Arizona Sun energy requirements?" APS responded in a letter dated August 29, 2014, stating: "APS might reach this requirement based on estimated third-party installation activity. But it might not." APS went on to say: "An additional 20 MW of AZ Sun is a reasonable amount that would ensure APS achieves compliance, but not exceed the target by too much." A total of 18.1 MW of third party owned DG was installed in the APS territory in the first three quarters of 2014.

Staff's Review of APS's Assertion that 20 MW of New Solar Resources are Needed

In order to determine the possible need for an additional 20-30 MW of AZ Sun projects, Staff sent data requests to APS requesting information showing how many MWh of the 2009 Settlement requirements are currently being provided by installed and operating systems, how many MWh are expected from systems under construction or reserved; and how many MWh of the requirements are currently uncommitted. Staff also requested APS to show how many MWh would be provided by the Redhawk proposal and how many would be provided by the APS Solar DG proposal. The responses by APS to Staff form the basis of the calculations shown in Table 1.

The APS calculations, shown in Table 1, indicate that the 20 MW APS Solar DG proposal would be deficient in meeting the Settlement requirements. However, a larger APS-owned DG program, with more than 3,000 homes, could be designed to meet the 2009 Settlement requirements.

Table 1. APS Calculations of MWh Needed to Meet the 2009 Settlement Requirements^{1,2}

<u>Category</u>	<u>MWh Provided</u>	<u>MWh Needed</u>
I. Existing and Operating Systems	1,560,594	
II. Systems under construction/reserved	<u>98,463</u>	
Subtotal	1,659,057	
III. Additional MWh Needed		40,943
IV. 20 MW Redhawk Output	56,064	None: 15,121 extra
V. 20 MW APS DG Output	33,000	7,943

¹ APS's Supplemental Response to Staff's Fifth Set of Data Requests provided by APS on September 26, 2014.

² Includes 18.1 MW of third party owned DG installed in the first three quarters of 2014.

After having reviewed APS's two filings and APS's responses to Staff's data requests, along with APS's August 29th reply to Commissioner Bitter-Smith, Staff believes that there may be questions as to whether APS has in fact established an absolute need for at least 20 MW of new solar in order to meet APS's 2009 Settlement agreement requirements. Especially considering that over 18 MW of third party capacity was installed the first three quarters of 2014. At that pace, over 20 MW would be installed in 2015.

Staff Review of the Two Proposed Projects

Staff sent a number of data requests to APS concerning both the Redhawk and the DG proposals. Staff has reviewed the April Redhawk proposal, the July DG proposal, and the APS responses to Staff's data requests. Staff has evaluated the APS Economic Comparison of the Redhawk Proposal to the APS AZ Sun DG Proposal.

Comparison of the Two APS Proposals

In order to compare the APS Redhawk proposal to the APS-owned DG proposal, Staff requested information from APS that identifies the revenue requirements for each option and the fuel reductions resulting from each option. Also included in the analysis of the APS Solar DG program were marketing costs for three years and twenty years of bill credits at \$30 per month per customer.

The proposed Redhawk power plant is a single-axis tracking photovoltaic system. APS suggests that, due to the ability of the photovoltaic panels to follow or "track" the sun all day long, the Redhawk plant is expected by APS to produce 40 percent more solar kWh than from the stationary photovoltaic systems which would be installed on customer homes in the APS Solar DG Program.

APS has calculated the annual revenue requirements for the Redhawk plant as shown in the first column of Table 2. APS has also estimated the annual fuel savings from the Redhawk system as shown in the second column of Table 2.

Table 2. Staff's Analysis of the Redhawk Revenue Requirements (in \$ millions)

	REDHAWK Low Case				REDHAWK High Case			
	Total Rev Req	Fuel Save	Net Rev Req	NPV Rev Req	Total Rev Req	Fuel Save	Net Rev Req	NPV Rev Req
2015	0	0	0	0.0	0	0	0	0
2016	6.7	-2.5	4.2	4.2	7.7	-2.5	5.2	5.2
2017	6.5	-2.5	4	3.7	7.4	-2.5	4.9	4.5
2018	6.1	-2.4	3.7	3.2	7.0	-2.4	4.6	4.0
2019	5.7	-2.4	3.3	2.6	6.5	-2.4	4.1	3.3
2020	5.5	-2.4	3.1	2.3	6.3	-2.4	3.9	2.9
2021	5.4	-2.4	3	2.1	6.2	-2.4	3.8	2.6
2022	5.3	-2.4	2.9	1.9	6.1	-2.4	3.7	2.4
2023	5.2	-2.4	2.8	1.7	6.0	-2.4	3.6	2.1
2024	5.1	-2.4	2.7	1.5	5.9	-2.4	3.5	1.9
2025	5	-2.4	2.6	1.3	5.7	-2.4	3.3	1.7
2026	5	-2.3	2.7	1.3	5.6	-2.3	3.3	1.6
2027	4.9	-2.3	2.6	1.1	5.5	-2.3	3.2	1.4
2028	4.8	-2.3	2.5	1.0	5.4	-2.3	3.1	1.3
2029	4.7	-2.3	2.4	0.9	5.3	-2.3	3.0	1.1
2030	4.6	-2.3	2.3	0.8	5.2	-2.3	2.9	1.0
2031	4.5	-2.3	2.2	0.7	5.1	-2.3	2.8	0.9
2032	4.4	-2.3	2.1	0.6	5.0	-2.3	2.7	0.8
2033	4.4	-2.3	2.1	0.6	4.9	-2.3	2.6	0.7
2034	4.3	-2.3	2	0.5	4.8	-2.3	2.5	0.7
2035	4.2	-2.2	2	0.5	4.7	-2.2	2.5	0.6
			\$55.2	\$32.5			\$69.2	\$40.7

The resulting Redhawk total low cost scenario net revenue requirement over 20 years is \$55.2 million. That is equal to a net present value of \$32.5 million in 2016 dollars for the low cost case.

In the Redhawk high cost case, the total net revenue requirements would be \$69.2 million and the net present value of the revenue requirement would be \$40.7 million in 2016 dollars.

The APS Solar DG Program takes into account other costs of the Solar DG Program. Included are \$1 million in marketing costs in the first year and \$100,000 in marketing costs in each of the second and third years. Also included are \$1.1 million per year in bill credit incentives to

“rent” the customer’s roof to host the photovoltaic system. That’s \$30 per month for 20 years for each of the 3,000 Solar DG Program customers, equaling \$1.1 million per year and totaling \$22.2 million in incentives over the 20-year life of the APS Solar DG Program. APS has estimated that the annual fuel savings for the APS Solar DG Program will range from \$1.2 - \$1.3 million per year.

Table 3. Staff’s Analysis of the APS Solar DG Revenue Requirements (in \$ millions)

	APS Solar DG Low Case						APS Solar DG High Case					
	Tot Rev Req	Mkt	Bill Credit	Fuel Save	Net Rev Req	NPV Rev Req	Tot Rev Req	Mkt	Bill Credit	Fuel Save	Net Rev Req	NPV Rev Req
2015	2.7	1	0.6	-0.7	3.6	3.6	3.3	1	0.6	-0.7	4.2	4.2
2016	5.7	0.1	1.1	-1.3	5.6	5.6	7	0.1	1.1	-1.3	6.9	6.9
2017	5.4	0.1	1.1	-1.3	5.3	4.9	6.7	0.1	1.1	-1.3	6.6	6.1
2018	5	0	1.1	-1.3	4.8	4.1	6.2	0	1.1	-1.3	6	5.2
2019	4.7	0	1.1	-1.3	4.5	3.6	5.8	0	1.1	-1.3	5.6	4.5
2020	4.6	0	1.1	-1.3	4.4	3.3	5.6	0	1.1	-1.3	5.4	4.0
2021	5.1	0	1.1	-1.3	4.9	3.4	6.1	0	1.1	-1.3	5.9	4.1
2022	5	0	1.1	-1.3	4.8	3.1	6	0	1.1	-1.3	5.8	3.7
2023	5	0	1.1	-1.3	4.8	2.8	5.9	0	1.1	-1.3	5.7	3.4
2024	4.9	0	1.1	-1.3	4.7	2.6	5.8	0	1.1	-1.3	5.6	3.1
2025	4.8	0	1.1	-1.3	4.6	2.3	5.7	0	1.1	-1.3	5.5	2.8
2026	4.7	0	1.1	-1.3	4.5	2.1	5.6	0	1.1	-1.3	5.4	2.6
2027	4.7	0	1.1	-1.3	4.5	2.0	5.5	0	1.1	-1.3	5.3	2.3
2028	4.6	0	1.1	-1.3	4.4	1.8	5.5	0	1.1	-1.3	5.3	2.2
2029	4.5	0	1.1	-1.3	4.3	1.6	5.4	0	1.1	-1.3	5.2	2.0
2030	4.4	0	1.1	-1.3	4.2	1.5	5.3	0	1.1	-1.3	5.1	1.8
2031	4.4	0	1.1	-1.2	4.3	1.4	5.2	0	1.1	-1.2	5.1	1.7
2032	4.3	0	1.1	-1.2	4.2	1.3	5.1	0	1.1	-1.2	5	1.5
2033	4.2	0	1.1	-1.2	4.1	1.2	5	0	1.1	-1.2	4.9	1.4
2034	4.1	0	1.1	-1.2	4	1.0	4.9	0	1.1	-1.2	4.8	1.3
2035	4.1	0	1.1	-1.2	4	1.0	4.8	0	1.1	-1.2	4.7	1.1
					\$94.5	\$54.2					\$114	\$65.7

Table 3 shows the net revenue requirement total over 20 years for the APS Solar DG Low Cost scenario is \$94.5 million and the net present value of the total net revenue requirement would be \$54.2 million in 2016 dollars.

In the APS Solar DG high cost case, the total net revenue requirements would be \$114 million and the net present value of the revenue requirements would be \$65.7 million in 2016 dollars.

Table 4. Comparison of the Costs of APS's Two Proposals

	Redhawk Low Cost Case	Redhawk High Cost Case	APS Solar DG Low Cost Case	APS Solar DG High Cost Case
Total 20-year Net Revenue Requirement	\$55.2 million	\$69.2 million	\$94.5 million	\$114 million
Net Present Value 20-year Revenue Requirement	\$32.5 million	\$40.7 million	\$54.2 million	\$65.7 million

As can be seen in Table 4, the economic comparison of the Redhawk proposal to the APS Solar DG proposal weighs in favor of the Redhawk proposal.

Staff's Solar Customer DG Program Proposal

For comparison purposes, Staff has developed a third possible proposal (Solar Customer DG Program) that would rely on a nominal up-front incentive of 10 cents per Watt that appears to offer a better economic outcome for both APS and its ratepayers. Because this proposal would have the solar customer provide the entire solar power plant cost, thereby avoiding 20 years of more expensive "rent subsidies", the total cost of Staff's proposed program will be lower over the 20-year timeframe.

Instead of offering \$30 monthly "rent incentive" subsidies to 3,000 customers for 20 years, which would cost APS and its ratepayers \$22.2 million over 20 years, APS could offer an up-front incentive of 10 cents per Watt. An incentive of 10 cents per Watt for 20 MW of DG systems would total a one-time 2015 payment of \$2 million. For that incentive, APS would own the RECs (as in its APS-Solar DG proposal) and could therefore utilize the solar kWh to help meet its REST requirements.

The \$2 million would come from the 2015 APS REST Plan budget. Because this would include only customer-owned power plants, using the Customer Incentive Program would avoid adding an additional \$57-70 million into rate base as APS has proposed in its Redhawk and AZ Sun DG Proposals. Since, under Staff's proposed Solar Customer DG proposal, the solar customers own the 20 MW of new generation, nothing would be added to future rate base for the 20 MW of Customer-Owned DG Systems. Staff assumes, as does APS, that a total of 3,000 customers would be needed to install 20 MW of DG systems.

Table 5. Staff's Analysis of Customer DG Revenue Requirements (in millions)

	Customer DG Low Case						Customer DG High Case					
	Tot Rev Req	Incent	Bill Credit	Fuel Save	Net Rev Req	NPV Rev Req	Tot Rev Req	Incent	Bill Credit	Fuel Save	Net Rev Req	NPV Rev Req
2015	0	2	0	-0.7	1.3	1.3	0	2	0	-0.7	1.3	1.3
2016	3	0	0	-1.3	1.7	1.7	3	0	0	-1.3	1.7	1.7
2017	3	0	0	-1.3	1.7	1.6	3	0	0	-1.3	1.7	1.6
2018	3	0	0	-1.3	1.7	1.5	3	0	0	-1.3	1.7	1.5
2019	3	0	0	-1.3	1.7	1.4	3	0	0	-1.3	1.7	1.4
2020	3	0	0	-1.3	1.7	1.3	3	0	0	-1.3	1.7	1.3
2021	3	0	0	-1.3	1.7	1.2	3	0	0	-1.3	1.7	1.2
2022	3	0	0	-1.3	1.7	1.1	3	0	0	-1.3	1.7	1.1
2023	3	0	0	-1.3	1.7	1.0	3	0	0	-1.3	1.7	1.0
2024	3	0	0	-1.3	1.7	0.9	3	0	0	-1.3	1.7	0.9
2025	3	0	0	-1.3	1.7	0.9	3	0	0	-1.3	1.7	0.9
2026	3	0	0	-1.3	1.7	0.8	3	0	0	-1.3	1.7	0.8
2027	3	0	0	-1.3	1.7	0.7	3	0	0	-1.3	1.7	0.7
2028	3	0	0	-1.3	1.7	0.7	3	0	0	-1.3	1.7	0.7
2029	3	0	0	-1.3	1.7	0.6	3	0	0	-1.3	1.7	0.6
2030	3	0	0	-1.3	1.7	0.6	3	0	0	-1.3	1.7	0.6
2031	3	0	0	-1.2	1.8	0.6	3	0	0	-1.2	1.8	0.6
2032	3	0	0	-1.2	1.8	0.5	3	0	0	-1.2	1.8	0.5
2033	3	0	0	-1.2	1.8	0.5	3	0	0	-1.2	1.8	0.5
2034	3	0	0	-1.2	1.8	0.5	3	0	0	-1.2	1.8	0.5
2035	3	0	0	-1.2	1.8	0.4	3	0	0	-1.2	1.8	0.4
					\$35.8	\$19.8					\$35.8	\$19.8

A Comparison of the Three Proposals

Staff has taken the APS economic comparison of its two proposals (Redhawk and AZ Sun DG) and added Staff's Solar Customer DG Program to the comparison. The updated comparison is shown below:

Table 6. Comparison of the Costs of APS's Two Proposals and Staff's Customer DG Proposal

	Redhawk Low Cost Case	Redhawk High Cost Case	APS Solar DG Low Cost Case	APS Solar DG High Cost Case	Customer DG Low Case	Customer DG High Case
Total 20-year Net Revenue Requirement	\$55.2 million	\$69.2 million	\$94.5 million	\$114 million	\$35.8 million	\$35.8 million
Net Present Value 20-year Revenue Requirement	\$32.5 million	\$40.7 million	\$54.2 million	\$65.7 million	\$19.8 million	\$19.8 million

Because, in Staff's Customer DG Proposal, there is no 30-year "rent incentive", no \$57-70 million expansion of rate base, and no payment by ratepayers for the solar power plants on solar customer roofs, the Customer DG proposal results in the lowest net revenue requirement and the lowest net present value of the 20-year revenue requirement as shown in Table 6. If APS were to pay no incentive in Staff's proposal, APS would save \$2 million in 2015.

Non-Economic Factors Worth Considering

In its July 28 filing which promoted the APS Solar DG program, APS mentioned a number of advantages of such a program. They included:

- The APS Solar DG systems could deploy a portion of the 3,000 systems to pursue specific purposes, such as serving low credit score customers or low income customers and providing system benefits.
- A portion of the APS DG systems could be oriented toward the west or southwest, which would increase the solar kWh production during system peak periods.
- Utility ownership would allow APS to install and operate advanced inverters. These advanced inverters would give APS the flexibility to manage power quality. They could help establish a better integration of rooftop solar with the utility distribution system.
- This program would offer yet another option for customers to "go solar".
- The APS Solar DG Program has a potential to show how the strategic deployment of DG can maximize system benefits.

Staff's Discussion of Non-Economic Factors

Staff has reviewed the non-economic factors that are suggested by APS in its filings. Staff has the following comments on these factors.

- Deployment for Special Purposes. Staff agrees that deploying a portion of the DG systems to allow low credit score or low income customers to participate in solar installations may have some value.
- Orientation to west or southwest in order to increase solar kWh production in peak periods. Staff agrees that orientation toward the west or southwest will provide a better match of solar kWh output and the APS peak demand. However, by orienting the panels away from an optimal due south orientation will reduce the annual output of the DG systems. This is an economic trade off: such an approach will require the installation of more MW than the proposed 20 MW DG Program proposal. For instance, if too many systems are oriented toward the west and southwest, APS may be forced to purchase 22-25 MW of DG systems to make up the loss of system output due to west-facing systems. This is contrary to the purpose of the proposals which are intended to meet the final portion of the 2009 Settlement requirements.
- Utility ownership would allow APS to install and operate advanced inverters. Staff agrees that the use of the advanced inverters could provide some ability to manage power quality and integration of rooftop solar with the utility distribution system.
- The APS Solar DG Program may show how the strategic deployment of DG can maximize system benefits. Staff agrees that evaluation of such a deployment may be beneficial. However, such a finding might also become evident with a deployment of less than 3,000 systems. APS should also be obtaining some of this same information from its Flagstaff project.

Staff's Comments on APS Estimates of Solar Outputs

Staff has noted that APS claims that the proposed Redhawk single-axis photovoltaic tracking system will produce 40 percent more kWh than the proposed APS Solar DG systems. If that is true, Staff calculates that the proposed 20 MW of APS Solar DG systems will have a shortfall in meeting the 2009 Settlement requirements.

Staff asked APS to provide performance data on existing single axis tracking system performance in the APS territory. APS responded with a list of 19 single axis tracking projects. Three of the projects (Foothills Solar, Gila Bend Solar, and Hyder 2 Solar) had the highest expected outputs: 3,196 kWh/kW/year; 3,396 kWh/kW/year and 3,280 kWh/kW/year, respectively, but did not have a full year's worth of performance data.

However, when Staff removed the three partial-year projects with incomplete data from the list, the remaining 16 projects averaged much lower in performance: only 2,056 kWh/kW/year.

This average performance was significantly lower than the output projected by APS for the Redhawk project. In response to a Staff data request, APS projected that Redhawk would produce 56,064 MWhr per year. That would be a rate of 2,800 kWh/kW/year. This significant discrepancy of 750 kWh/kW/year (2,056 vs. 2,800) raises questions by Staff about the true performance that can be expected at Redhawk.

APS expects the proposed Redhawk system to produce 2,800 kWh/per kW/per year. APS also expects the APS solar DG systems to produce 1,650 kWh/kW/year. If the latter calculation is correct, the APS solar DG proposal or the Staff Customer DG proposal will fail to produce the 40,943 Mega-Watt hours that APS needs to meet the 2009 Settlement obligations. (See Table 1.)

So, in order to meet the 2009 Settlement requirements, either the APS solar DG Program or the Staff Customer DG Program must include an additional 5 MW of DG in order to produce at least 40,943 or more MWh. In the case of the APS Solar DG Program, adding 5 MW would cost ratepayers an additional \$15 million in capital costs and rate base increases. An additional 715 customers would be needed and the additional 20-year "lease" incentive would be \$5 million.

Similarly, the Staff Customer DG proposal would require an additional 715 customers. However, since the solar customers would pay for the solar power plants, non-solar rate payers would pay no additional capital costs and the APS rate base would not increase. The increase in the one-time incentive for customers, at \$0.10 per Watt, would be \$500,000.

Staff Recommendations

Based on the above, Staff does not believe that APS has definitively demonstrated that an additional 20 MW of AZ Sun is needed to meet the requirements of the 2009 Settlement. Therefore, Staff recommends that APS submit information in its next REST Implementation Plan filing, due July 1, 2015, discussing whether APS will meet its 1,700,000 MWh of renewable resources by December 31, 2015. If APS cannot meet that requirement, APS should be granted, at this time, a one year extension of that requirement.

However, if the Commission believes that 20 MW of AZ Sun should be approved at this time, Staff recommends that APS be required by the Commission to implement Staff's Customer DG proposal. The costs of the Customer DG proposal (net present value of \$28.4 - \$35.2 million for the 20-year revenue requirement) are lower than those of the Redhawk proposal (N.P.V. of \$32.5 - \$40.7 million) or the APS Solar DG proposal (N.P.V. of \$54.2 - \$65.7 million).



Steven M. Olea
Director
Utilities Division

SMO:RTW:lhm\MAS

ORIGINATOR: Ray T. Williamson

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BEFORE THE ARIZONA CORPORATION COMMISSION

- BOB STUMP
Chairman
- GARY PIERCE
Commissioner
- BRENDA BURNS
Commissioner
- BOB BURNS
Commissioner
- SUSAN BITTER SMITH
Commissioner

IN THE MATTER OF ARIZONA PUBLIC
SERVICE COMPANY FOR APPROVAL OF
ITS 2014 RENEWABLE ENERGY
STANDARD IMPLEMENTATION PLAN
FOR RESET OF RENEWABLE ENERGY
ADJUSTOR

DOCKET NO. E-01345A-13-0140

IN THE MATTER OF ARIZONA PUBLIC
SERVICE COMPANY FOR APPROVAL OF
ITS 2015 RENEWABLE ENERGY
STANDARD IMPLEMENTATION PLAN
FOR RESET OF RENEWABLE ENERGY
ADJUSTOR

DOCKET NO. E-01345A-14-0250

DECISION NO. _____

ORDER

Open Meeting
November 13, 2014
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. Arizona Public Service Company ("APS" or "Company") is certificated to provide electric service as a public service corporation in the State of Arizona.
2. During the Arizona Corporation Commission ("Commission") deliberations concerning the 2014 APS Renewable Energy Standard and Tariff ("REST") Plan, the Commission queried APS about its need for 30 MW of AZ Sun projects to meet its 2009 Rate Case Settlement Agreement ("2009 Settlement") obligations.
3. In Decision No. 74237 (January 7, 2014), the Commission ordered APS to submit information in this docket by April 15, 2014 "regarding whether it is necessary to continue the final 30

1 MW phase of AZ Sun in order to comply with the 2009 Settlement Agreement.” APS was also
2 required to discuss, in its filing, the “cost-effectiveness of utility-owned generation and third party
3 wholesale purchased power agreements in completing this final 30 MW phase of AZ Sun.”

4 4. APS docketed its compliance filing in this matter on April 15, 2014. APS said that
5 recent data indicated that “APS does not need all 30 MW of AZ Sun to meet its obligations under the
6 2009 Settlement to acquire 1,700,000 MWh of new renewable energy resources by December 31,
7 2015.”

8 5. APS did request, in its April 15 filing, authorization to construct a 20 MW utility-
9 owned solar PV project that would be located at APS’s Redhawk Power Station.

10 6. In its April 15, 2014, filing, APS compared the advantages and disadvantages of third
11 party-owned solar projects to those of utility-owned projects. APS asserted that “utility-owned
12 resources often provide significant economic and non-economic benefits for customers over the long-
13 term, and pose less overall risk.” APS also asserted that “...utility ownership is a prudent option for
14 reliable, low-cost renewable energy.”

15 7. On July 28, 2014, APS filed a Supplemental Application, proposing the AZ Sun DG
16 Program. The AZ Sun DG Program is an alternative to the 20 MW Redhawk project. This 20 MW
17 utility-owned DG program would “strategically deploy DG to maximize system benefits.”

18 8. In this Solar DG Program, APS would install solar DG systems on the residential
19 customer’s roof and on the utility side of the meter. APS would use local solar contractors, selected
20 competitively, to install the Solar DG systems throughout the APS service territory. APS would
21 “rent” the customer rooftop for a \$30 per month bill credit. All of the solar-generated electricity
22 would be resold by APS to its customers.

23 9. On October 7, 2014, APS filed a “Project Description of the Proposed AZ Sun
24 Residential Rooftop Project”. This filing included program administration details.

25 Verification of the Need for an Additional 20-30 MW of Solar

26 10. In Decision No. 74237, the Commission ordered APS to “submit information to this
27 docket regarding whether it is necessary to continue the final 30 MW phase of AZ Sun in order to
28 comply with the 2009 Settlement Agreement, as well as discuss the cost effectiveness of utility-owned

1 generation and third party wholesale purchased power agreements in completing this final 30 MW
2 phase of AZ Sun.”

3 11. The Commission further ordered “that when Staff files its recommendations regarding
4 Arizona Public Service Company’s 2015 REST Implementation Plan, it shall include a discussion of
5 whether or not Arizona Public Service Company needs to install any portion of the final 30 MW phase
6 of AZ Sun in order to comply with the REST Rules and/or the 2009 Settlement Agreement. These
7 recommendations shall consider the information filed by Arizona Public Service Company and any
8 interested parties regarding the cost effectiveness of utility-owned generation and third party wholesale
9 purchased power agreements in completing this final 30 MW phase of AZ Sun.”

10 12. In a letter dated August 14, 2014, Commissioner Susan Bitter-Smith asked APS the
11 following question: “Does APS need 20 MW for its Arizona Sun Program in order to meet its
12 Arizona Sun energy requirements?” APS responded in a letter dated August 29, 2014, stating: “APS
13 might reach this requirement based on estimated third-party installation activity. But it might not.”
14 APS went on to say: “An additional 20 MW of AZ Sun is a reasonable amount that would ensure APS
15 achieves compliance, but not exceed the target by too much.” A total of 18.1 MW of third party
16 owned DG was installed in the APS territory in the first three quarters of 2014.

17 Staffs Review of APS’s Assertion that 20 MW of New Solar Resources are Needed

18 13. In order to determine the possible need for an additional 20-30 MW of AZ Sun
19 projects, Staff sent data requests to APS requesting information showing how many MWh of the 2009
20 Settlement requirements are currently being provided by installed and operating systems, how many
21 MWh are expected from systems under construction or reserved; and how many MWh of the
22 requirements are currently uncommitted. Staff also requested APS to show how many MWh would
23 be provided by the Redhawk proposal and how many would be provided by the APS Solar DG
24 proposal. The responses by APS to Staff form the basis of the calculations shown in Table 1.

25 14. The APS calculations, shown in Table 1, indicate that the 20 MW APS Solar DG
26 proposal would be deficient in meeting the Settlement requirements. However, a larger APS-owned
27 DG program, with more than 3,000 homes, could be designed to meet the 2009 Settlement
28 requirements.

1 Table 1. APS Calculations of MWh Needed to Meet the 2009 Settlement Requirements^{1,2}

2	<u>Category</u>	<u>MWh Provided</u>	<u>MWh Needed</u>
3	I. Existing and Operating Systems	1,560,594	
4	II. Systems under construction/reserved	98,463	
5	Subtotal	1,659,057	
6	III. Additional MWh Needed		40,943
7	IV. 20 MW Redhawk Output	56,064	None: 15,121 extra
8	V. 20 MW APS DG Output	33,000	7,943

8 ¹ APS's Supplemental Response to Staff's Fifth Set of Data Requests provided by APS on September 26, 2014.

9 ² Includes 18.1 MW of third party owned DG installed in the first three quarters of 2014.

10 15. After having reviewed APS's two filings and APS's responses to Staff's data requests,
 11 along with APS's August 29th reply to Commissioner Bitter-Smith, Staff believes that there may be
 12 questions as to whether APS has established an absolute need for at least 20 MW of new solar in order
 13 to meet APS's 2009 Settlement agreement requirements. Especially considering that over 18 MW of
 14 third party capacity was installed in the first three quarters of 2014. At that pace, over 20 MW would
 15 be installed in 2015.

16 Staff Review of the Two Proposed Projects

17 16. Staff sent a number of data requests to APS concerning both the Redhawk and the
 18 DG proposals. Staff has reviewed the April Redhawk proposal, the July DG proposal, and the APS
 19 responses to Staff's data requests. Staff has evaluated the APS Economic Comparison of the
 20 Redhawk Proposal to the APS AZ Sun DG Proposal.

21 Comparison of the Two APS Proposals

22 17. In order to compare the APS Redhawk proposal to the APS-owned DG proposal,
 23 Staff requested information from APS that identifies the revenue requirements for each option and
 24 the fuel reductions resulting from each option. Also included in the analysis of the APS Solar DG
 25 program were marketing costs for three years and twenty years of bill credits at \$30 per month per
 26 customer.

27 18. The proposed Redhawk power plant is a single-axis tracking photovoltaic system. APS
 28 suggests that, due to the ability of the photovoltaic panels to follow or "track" the sun all day long, the

1 Redhawk plant is expected by APS to produce 40 percent more solar kWh than from the stationary
2 photovoltaic systems which would be installed on customer homes in the APS Solar DG Program.

3 19. APS has calculated the annual revenue requirements for the Redhawk plant as shown
4 in the first column of Table 2. APS has also estimated the annual fuel savings from the Redhawk
5 system as shown in the second column of Table 2.

6 Table 2. Staff's Analysis of the Redhawk Revenue Requirements (in \$ millions)

	REDHAWK Low Case				REDHAWK High Case			
	Total Rev Req	Fuel Save	Net Rev Req	NPV Rev Req	Total Rev Req	Fuel Save	Net Rev Req	NPV Rev Req
2015	0	0	0	0.0	0	0	0	0
2016	6.7	-2.5	4.2	4.2	7.7	-2.5	5.2	5.2
2017	6.5	-2.5	4	3.7	7.4	-2.5	4.9	4.5
2018	6.1	-2.4	3.7	3.2	7.0	-2.4	4.6	4.0
2019	5.7	-2.4	3.3	2.6	6.5	-2.4	4.1	3.3
2020	5.5	-2.4	3.1	2.3	6.3	-2.4	3.9	2.9
2021	5.4	-2.4	3	2.1	6.2	-2.4	3.8	2.6
2022	5.3	-2.4	2.9	1.9	6.1	-2.4	3.7	2.4
2023	5.2	-2.4	2.8	1.7	6.0	-2.4	3.6	2.1
2024	5.1	-2.4	2.7	1.5	5.9	-2.4	3.5	1.9
2025	5	-2.4	2.6	1.3	5.7	-2.4	3.3	1.7
2026	5	-2.3	2.7	1.3	5.6	-2.3	3.3	1.6
2027	4.9	-2.3	2.6	1.1	5.5	-2.3	3.2	1.4
2028	4.8	-2.3	2.5	1.0	5.4	-2.3	3.1	1.3
2029	4.7	-2.3	2.4	0.9	5.3	-2.3	3.0	1.1
2030	4.6	-2.3	2.3	0.8	5.2	-2.3	2.9	1.0
2031	4.5	-2.3	2.2	0.7	5.1	-2.3	2.8	0.9
2032	4.4	-2.3	2.1	0.6	5.0	-2.3	2.7	0.8
2033	4.4	-2.3	2.1	0.6	4.9	-2.3	2.6	0.7
2034	4.3	-2.3	2	0.5	4.8	-2.3	2.5	0.7
2035	4.2	-2.2	2	0.5	4.7	-2.2	2.5	0.6
			\$55.2	\$32.5			\$69.2	\$40.7

24 20. The resulting Redhawk total low cost scenario net revenue requirement over 20 years
25 is \$55.2 million. That is equal to a net present value of \$32.5 million in 2016 dollars for the low cost
26 case.

27 21. In the Redhawk high cost case, the total net revenue requirements would be \$69.2
28 million and the net present value of the revenue requirement would be \$40.7 million in 2016 dollars.

22. The APS Solar DG Program takes into account other costs of the Solar DG Program. Included are \$1 million in marketing costs in the first year and \$100,000 in marketing costs in each of the second and third years. Also included are \$1.1 million per year in bill credit incentives to “rent” the customer’s roof to host the photovoltaic system. That’s \$30 per month for 20 years for each of the 3,000 Solar DG Program customers, equaling \$1.1 million per year and totaling \$22.2 million in incentives over the 20-year life of the APS Solar DG Program. APS has estimated that the annual fuel savings for the APS Solar DG Program will range from \$1.2 - \$1.3 million per year.

Table 3. Staff’s Analysis of the APS Solar DG Revenue Requirements (in \$ millions)

	APS Solar DG Low Case						APS Solar DG High Case					
	Tot Rev Req	Mkt	Bill Credit	Fuel Save	Net Rev Req	NPV Rev Req	Tot Rev Req	Mkt	Bill Credit	Fuel Save	Net Rev Req	NPV Rev Req
2015	2.7	1	0.6	-0.7	3.6	3.6	3.3	1	0.6	-0.7	4.2	4.2
2016	5.7	0.1	1.1	-1.3	5.6	5.6	7	0.1	1.1	-1.3	6.9	6.9
2017	5.4	0.1	1.1	-1.3	5.3	4.9	6.7	0.1	1.1	-1.3	6.6	6.1
2018	5	0	1.1	-1.3	4.8	4.1	6.2	0	1.1	-1.3	6	5.2
2019	4.7	0	1.1	-1.3	4.5	3.6	5.8	0	1.1	-1.3	5.6	4.5
2020	4.6	0	1.1	-1.3	4.4	3.3	5.6	0	1.1	-1.3	5.4	4.0
2021	5.1	0	1.1	-1.3	4.9	3.4	6.1	0	1.1	-1.3	5.9	4.1
2022	5	0	1.1	-1.3	4.8	3.1	6	0	1.1	-1.3	5.8	3.7
2023	5	0	1.1	-1.3	4.8	2.8	5.9	0	1.1	-1.3	5.7	3.4
2024	4.9	0	1.1	-1.3	4.7	2.6	5.8	0	1.1	-1.3	5.6	3.1
2025	4.8	0	1.1	-1.3	4.6	2.3	5.7	0	1.1	-1.3	5.5	2.8
2026	4.7	0	1.1	-1.3	4.5	2.1	5.6	0	1.1	-1.3	5.4	2.6
2027	4.7	0	1.1	-1.3	4.5	2.0	5.5	0	1.1	-1.3	5.3	2.3
2028	4.6	0	1.1	-1.3	4.4	1.8	5.5	0	1.1	-1.3	5.3	2.2
2029	4.5	0	1.1	-1.3	4.3	1.6	5.4	0	1.1	-1.3	5.2	2.0
2030	4.4	0	1.1	-1.3	4.2	1.5	5.3	0	1.1	-1.3	5.1	1.8
2031	4.4	0	1.1	-1.2	4.3	1.4	5.2	0	1.1	-1.2	5.1	1.7
2032	4.3	0	1.1	-1.2	4.2	1.3	5.1	0	1.1	-1.2	5	1.5
2033	4.2	0	1.1	-1.2	4.1	1.2	5	0	1.1	-1.2	4.9	1.4
2034	4.1	0	1.1	-1.2	4	1.0	4.9	0	1.1	-1.2	4.8	1.3
2035	4.1	0	1.1	-1.2	4	1.0	4.8	0	1.1	-1.2	4.7	1.1
					\$94.5	\$54.2					\$114	\$65.7

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23. Table 3 shows the net revenue requirement total over 20 years for the APS Solar DG Low Cost scenario is \$94.5 million and the net present value of the total net revenue requirement would be \$54.2 million in 2016 dollars.

24. In the APS Solar DG high cost case, the total net revenue requirements would be \$114 million and the net present value of the revenue requirements would be \$65.7 million in 2016 dollars.

Table 4. Comparison of the Costs of APS's Two Proposals

	Redhawk Low Cost Case	Redhawk High Cost Case	APS Solar DG Low Cost Case	APS Solar DG High Cost Case
Total 20-year Net Revenue Requirement	\$55.2 million	\$69.2 million	\$94.5 million	\$114 million
Net Present Value 20-year Revenue Requirement	\$32.5 million	\$40.7 million	\$54.2 million	\$65.7 million

25. As can be seen in Table 4, the economic comparison of the Redhawk proposal to the APS Solar DG proposal weighs in favor of the Redhawk proposal.

Staff's Solar Customer DG Program Proposal

26. For comparison purposes, Staff has developed a third possible proposal (Solar Customer DG Program) that would rely on a nominal up-front incentive of 10 cents per Watt that appears to offer a better economic outcome for both APS and its ratepayers. Because this proposal would have the solar customer provide the entire solar power plant cost, thereby avoiding 20 years of more expensive "rent subsidies", the total cost of Staff's proposed program will be lower over the 20-year timeframe.

27. Instead of offering \$30 monthly "rent incentive" subsidies to 3,000 customers for 20 years, which would cost APS and its ratepayers \$22.2 million over 20 years, APS could offer an up-front incentive of 10 cents per Watt. An incentive of 10 cents per Watt for 20 MW of DG systems would total a one-time 2015 payment of \$2 million. For that incentive, APS would own the RECs (as in its APS Solar DG proposal) and could therefore utilize the solar kWh to help meet its REST requirements.

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28. The \$2 million would come from the 2015 APS REST Plan budget. Because this would include only customer-owned solar systems, using the Customer Incentive Program would avoid adding an additional \$57-70 million into rate base as APS has proposed in its Redhawk and AZ Sun DG Proposals. Since, under Staff's proposed Solar Customer DG proposal, the solar customers own the 20 MW of new generation, nothing would be added to future rate base for the 20 MW of Customer-Owned DG Systems. Staff assumes, as does APS, that a total of 3,000 customers would be needed to install 20 MW of DG systems.

Table 5. Staff's Analysis of Customer DG Revenue Requirements (in millions)

	Customer DG Low Case						Customer DG High Case					
	Tot Rev Req	Incent	Bill Credit	Fuel Save	Net Rev Req	NPV Rev Req	Tot Rev Req	Incent	Bill Credit	Fuel Save	Net Rev Req	NPV Rev Req
2015	0	2	0	-0.7	1.3	1.3	0	2	0	-0.7	1.3	1.3
2016	3	0	0	-1.3	1.7	1.7	3	0	0	-1.3	1.7	1.7
2017	3	0	0	-1.3	1.7	1.6	3	0	0	-1.3	1.7	1.6
2018	3	0	0	-1.3	1.7	1.5	3	0	0	-1.3	1.7	1.5
2019	3	0	0	-1.3	1.7	1.4	3	0	0	-1.3	1.7	1.4
2020	3	0	0	-1.3	1.7	1.3	3	0	0	-1.3	1.7	1.3
2021	3	0	0	-1.3	1.7	1.2	3	0	0	-1.3	1.7	1.2
2022	3	0	0	-1.3	1.7	1.1	3	0	0	-1.3	1.7	1.1
2023	3	0	0	-1.3	1.7	1.0	3	0	0	-1.3	1.7	1.0
2024	3	0	0	-1.3	1.7	0.9	3	0	0	-1.3	1.7	0.9
2025	3	0	0	-1.3	1.7	0.9	3	0	0	-1.3	1.7	0.9
2026	3	0	0	-1.3	1.7	0.8	3	0	0	-1.3	1.7	0.8
2027	3	0	0	-1.3	1.7	0.7	3	0	0	-1.3	1.7	0.7
2028	3	0	0	-1.3	1.7	0.7	3	0	0	-1.3	1.7	0.7
2029	3	0	0	-1.3	1.7	0.6	3	0	0	-1.3	1.7	0.6
2030	3	0	0	-1.3	1.7	0.6	3	0	0	-1.3	1.7	0.6
2031	3	0	0	-1.2	1.8	0.6	3	0	0	-1.2	1.8	0.6
2032	3	0	0	-1.2	1.8	0.5	3	0	0	-1.2	1.8	0.5
2033	3	0	0	-1.2	1.8	0.5	3	0	0	-1.2	1.8	0.5
2034	3	0	0	-1.2	1.8	0.5	3	0	0	-1.2	1.8	0.5
2035	3	0	0	-1.2	1.8	0.4	3	0	0	-1.2	1.8	0.4
					\$35.8	\$19.8					\$35.8	\$19.8

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1 A Comparison of the Three Proposals

2 29. Staff has taken the APS economic comparison of its two proposals (Redhawk and AZ
3 Sun DG) and added Staff's Solar Customer DG Program to the comparison. The updated
4 comparison is shown below:

5 Table 6. Comparison of the Costs of APS's Two Proposals and Staff's Customer DG Proposal

	Redhawk Low Cost Case	Redhawk High Cost Case	APS Solar DG Low Cost Case	APS Solar DG High Cost Case	Customer DG Low Case	Customer DG High Case
Total 20-year Net Revenue Requirement	\$55.2 million	\$69.2 million	\$94.5 million	\$114 million	\$35.8 million	\$35.8 million
Net Present Value 20-year Revenue Requirement	\$32.5 million	\$40.7 million	\$54.2 million	\$65.7 million	\$19.8 million	\$19.8 million

12 30. Because, in Staff's Customer DG Proposal, there is no 30-year "rent incentive", no
13 \$57-70 million expansion of rate base, and no payment by ratepayers for the solar power plants on
14 solar customer roofs, the Customer DG proposal results in the lowest net revenue requirement and
15 the lowest net present value of the 20-year revenue requirement as shown in Table 6. If APS were to
16 pay no incentive in Staff's proposal, APS would save \$2 million in 2015.

17 Non-Economic Factors Worth Considering

18 31. In its July 28 filing which promoted the APS Solar DG program, APS mentioned a
19 number of advantages of such a program. They included:

- 20 • The APS Solar DG systems could deploy a portion of the 3,000 systems to pursue
21 specific purposes, such as serving low credit score customers or low income
22 customers and providing system benefits.
- 23 • A portion of the APS DG systems could be oriented toward the west or
24 southwest, which would increase the solar kWh production during system peak
25 periods.
- 26 • Utility ownership would allow APS to install and operate advanced inverters.
27 These advanced inverters would give APS the flexibility to manage power quality.
28 They could help establish a better integration of rooftop solar with the utility
distribution system.
- This program would offer yet another option for customers to "go solar".

- 1 • The APS Solar DG Program has a potential to show how the strategic deployment
2 of DG can maximize system benefits.

3 Staff's Discussion of Non-Economic Factors

4 32. Staff has reviewed the non-economic factors that are suggested by APS in its filings.
5 Staff has the following comments on these factors.

- 6 • Deployment for Special Purposes. Staff agrees that deploying a portion of the DG
7 systems to allow low credit score or low income customers to participate in solar
8 installations may have some value.
- 9 • Orientation to west or southwest in order to increase solar kWh production in
10 peak periods. Staff agrees that orientation toward the west or southwest will
11 provide a better match of solar kWh output and the APS peak demand. However,
12 by orienting the panels away from an optimal due south orientation will reduce the
13 annual output of the DG systems. This is an economic trade off: such an
14 approach will require the installation of more MW than the proposed 20 MW DG
15 Program proposal. For instance, if too many systems are oriented toward the west
16 and southwest, APS may be forced to purchase 22-25 MW of DG systems to make
17 up the loss of system output due to west-facing systems. This is contrary to the
18 purpose of the proposals which are intended to meet the final portion of the 2009
19 Settlement requirements.
- 20 • Utility ownership would allow APS to install and operate advanced inverters. Staff
21 agrees that the use of the advanced inverters could provide some ability to manage
22 power quality and integration of rooftop solar with the utility distribution system.
- 23 • The APS Solar DG Program may show how the strategic deployment of DG can
24 maximize system benefits. Staff agrees that evaluation of such a deployment may
25 be beneficial. However, such a finding might also become evident with a
26 deployment of less than 3,000 systems. APS should also be obtaining some of this
27 same information from its Flagstaff project.

28 Staff's Comments on APS Estimates of Solar Outputs

29 33. Staff has noted that APS claims that the proposed Redhawk single-axis photovoltaic
30 tracking system will produce 40 percent more kWh than the proposed APS Solar DG systems. If that
31 is true, Staff calculates that the proposed 20 MW of APS Solar DG systems will have a shortfall in
32 meeting the 2009 Settlement requirements.

33 34. Staff asked APS to provide performance data on existing single axis tracking system
34 performance in the APS territory. APS responded with a list of 19 single axis tracking projects. Three
35 of the projects (Foothills Solar, Gila Bend Solar, and Hyder 2 Solar) had the highest expected outputs:

1 3,196 kWh/kW/year; 3,396 kWh/kW/year and 3,280 kWh/kW/year, respectively, but did not have a
2 full year's worth of performance data.

3 35. However, when Staff removed the three partial-year projects with incomplete data
4 from the list, the remaining 16 projects averaged much lower in performance: only 2,056
5 kWh/kW/year.

6 36. This average performance was significantly lower than the output projected by APS for
7 the Redhawk project. In response to a Staff data request, APS projected that Redhawk would produce
8 56,064 MWhr per year. That would be a rate of 2,800 kWh/kW/year. This significant discrepancy of
9 750 kWh/kW/year (2,056 vs. 2,800) raises questions by Staff about the true performance that can be
10 expected at Redhawk.

11 37. APS expects the proposed Redhawk system to produce 2,800 kWh/per kW/per year.
12 APS also expects the APS solar DG systems to produce 1,650 kWh/kW/year. If the latter calculation
13 is correct, the APS solar DG proposal or the Staff Customer DG proposal will fail to produce the
14 40,943 Mega-Watt hours that APS needs to meet the 2009 Settlement obligations. (See Table 1.)

15 38. So, in order to meet the 2009 Settlement requirements, either the APS solar DG
16 Program or the Staff Customer DG Program must include an additional 5 MW of DG in order to
17 produce at least 40,943 or more MWh. In the case of the APS Solar DG Program, adding 5 MW
18 would cost ratepayers an additional \$15 million in capital costs and rate base increases. An additional
19 715 customers would be needed and the additional 20-year "lease" incentive would be \$5 million.

20 39. Similarly, the Staff Customer DG proposal would require an additional 715 customers.
21 However, since the solar customers would pay for the solar power plants, non-solar rate payers would
22 pay no additional capital costs and the APS rate base would not increase. The increase in the one-time
23 incentive for customers, at \$0.10 per Watt, would be \$500,000.

24 Staff Recommendations

25 40. Based on the above, Staff does not believe that APS has reasonably demonstrated that
26 an additional 20 MW of AZ Sun is needed to meet the requirements of the 2009 Settlement.
27 Therefore, Staff recommends that APS submit information in its next REST Implementation Plan
28 filing, due July 1, 2015, discussing whether APS will meet its 1,700,000 MWh of renewable resources

1 by December 31, 2015. If APS cannot meet that requirement, APS should be granted, at this time, a
2 one year extension of that requirement.

3 41. However, if the Commission believes that 20 MW of AZ Sun should be approved at
4 this time, Staff recommends that APS be required by the Commission to implement Staff's Customer
5 DG proposal (Option C). The costs of the Customer DG proposal (net present value of \$28.4 - \$35.2
6 million for the 20-year revenue requirement) are lower than those of the Redhawk proposal (N.P.V. of
7 \$32.5 - \$40.7 million) or the APS Solar DG proposal (N.P.V. of \$54.2 - \$65.7 million).

8 CONCLUSIONS OF LAW

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

11 2. The Commission has jurisdiction over Arizona Public Service Company and over the
12 subject matter of the application.

13 3. The Commission, having reviewed Arizona Public Service Company's application and
14 Staff's Memorandum dated November 3, 2014, concludes that it is in the public interest to deny 20
15 MW for AZ Sun at this time.

16 ORDER

17 IT IS THEREFORE ORDERED that the Arizona Public Service Company proposals to
18 build a 20 MW Redhawk facility or to build 20 MW of Arizona Public Service Company-owned DG
19 systems are denied, at this time, but could be reconsidered in 2015.

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IT IS FURTHER ORDERED that when Arizona Public Service Company files its recommendations regarding Arizona Public Service Company's 2016 REST Implementation Plan, it shall include a discussion of whether or not Arizona Public Service Company will meet its 1,700,000 MWh of renewable resources requirement of the 2009 Settlement by December 31, 2015.

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

BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION

CHAIRMAN

COMMISSIONER

COMMISSIONER

COMMISSIONER

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IN WITNESS WHEREOF, I, JODI 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 _____, 2014.

JODI JERICH
EXECUTIVE DIRECTOR

DISSENT: _____

DISSENT: _____

SMO:RTW:lhmm\MAS

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