

ORIGINAL

NEW APPLICATION



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1 BEFORE THE ARIZONA CORPORATION COMMISSION,
2 COMMISSIONERS

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ARIZONA CORPORATION COMMISSION
DOCKET CONTROL

E-01345A-10-0166

7 IN THE MATTER OF ARIZONA PUBLIC
8 SERVICE COMPANY'S REQUEST FOR
9 APPROVAL OF SCHOOLS AND
10 GOVERNMENT RENEWABLE ENERGY
11 PROGRAM

DOCKET NO. E-01345A-10-_____
Arizona Corporation Commission
APPLICATION DOCKETED

APR 29 2010

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12 In Decision No. 71448, the Arizona Corporation Commission ("Commission")
13 adopted (with modification) the Settlement Agreement in Arizona Public Service Company's
14 ("APS" or "Company") most recent rate case. Pursuant to the terms of the Settlement
15 Agreement, APS was required to file a new program for on-site solar energy for schools that
16 will eliminate up-front customer cost,¹ and a new program for governmental institutions that
17 will substantially reduce or eliminate up-front customer cost for solar energy.² In this filing,
18 APS is proposing a single program that meets the objectives of both the schools and
19 government program provisions of the Settlement Agreement.

20 **I. BACKGROUND**

21 Section 15.5 of the Settlement Agreement required APS to create a new program for
22 on-site solar energy that included photovoltaic ("PV") systems, solar water heating and
23 daylighting, and eliminated up-front customer costs for public and charter elementary schools
24 and secondary schools in the Company's service territory. The Company, in collaboration
25 with the Arizona Schools Facilities Board, was required to develop a means of determining
26 the priority of school projects, taking into consideration the assessed valuation of the school

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28 ¹ See Exhibit A to Decision No. 71448 (Settlement Agreement) at Section 15.5.

² *Id.* at Section 15.6.

1 district, participation in the National School Lunch Program, geographic diversity and the
2 need for the project. In total, the school projects funded through this program are targeted to
3 offset 50,000 megawatt hours of annual consumption or generation within 36 months of the
4 Commission's approval of the program.

5 Section 15.6 of the Settlement Agreement required APS to design a new program for
6 governmental institutions for distributed solar energy, including PV systems, solar water
7 heating and daylighting that would substantially reduce or eliminate up-front customer costs.

8 Because the requirements for both schools and government programs are similar, APS
9 has developed a single Schools and Government Program. However, the budget, annual
10 energy savings, and generation will be accounted for separately to track APS's progress in
11 reaching the 50,000 megawatt hour goal for schools, and to ensure that adequate funding is
12 available to meet this objective. All participating schools must be publically-funded
13 kindergarten through twelfth grade, and the schools or governmental institutions must be
14 located within APS's service territory. As part of the Schools and Government Program,
15 participants would be required to provide an integrated education component with PV
16 systems, such as kiosks, displays or other appropriate signage, to increase students' and/or the
17 public's awareness and understanding of solar energy.

18 In total, APS is requesting a first year budget of up to \$5.6 million for school projects
19 and up to \$1.6 million for governmental institution projects, resulting in a twenty year cost of
20 up to \$87.9 million and up to \$20.9 million, respectively. APS anticipates an approximate
21 total of twenty-six school and ten governmental institution PV projects, over forty solar
22 daylighting projects, and five solar thermal projects can be funded or developed in the first
23 year of the program. Future year project diversity will likely depend on the results of the first
24 year's deployments.

25 To eliminate up-front costs that would normally be incurred by schools or
26 governmental institutions when installing solar facilities, APS is proposing multiple financing
27 options to support these installations, including Solar Service Agreements ("SSAs") with
28 third-party providers and limited utility ownership for PV systems. For solar daylighting

1 installations, APS is proposing a partnership with National Bank of Arizona ("NBAZ") for a
2 designated lease program.

3 Prior to APS's commencement of design work for the proposed program, the
4 Company engaged in weeks of discussions with technical, financial, and school stakeholders.
5 APS solicited input from key stakeholders, including the Arizona Schools Facilities Board,
6 Mohave Educational Services Cooperative, school superintendents and facilities managers,
7 and financing institutions, as well as technical experts in the PV, solar daylighting and solar
8 thermal industry.³ APS worked closely with the Arizona Schools Facilities Board to develop
9 criteria for the awarding of the program funds and to design the Project Prioritization Matrix,
10 which is included in Exhibit A.⁴ This matrix is designed to ensure that school districts that
11 have historically had limited access to APS's distributed energy funding would not be
12 "crowded out" and would receive funding on a prioritized basis.⁵ Governmental institution
13 applications will be evaluated based on their location within lesser-populated counties in
14 Arizona, thereby increasing access to this program in rural areas.

15 The stakeholder participation provided valuable insights to assure that APS was able to
16 create a program that best meets the unique demands of this tax-exempt, publically-funded
17 customer base. With the feedback received from stakeholder discussions and the Company's
18 experience with its previous programs for schools and government,⁶ APS designed the
19 proposed Schools and Government Program to allow for the easy adoption of solar
20 technologies with options that would eliminate up-front costs to the schools and substantially

21 ³ These stakeholders include technical representatives from the non-residential PV, solar thermal and solar
22 daylighting industries who have extensive experience working with rural and urban schools and governmental
23 entities. In addition, APS spoke with local and national financing institutions that have participated in current
24 APS schools and government incentive programs. Representatives from both urban and rural school districts
25 and a purchasing cooperative were also consulted; they were able to provide relevant information regarding
26 procurement processes, financial needs and the feasibility of future installations.

27 ⁴ The Arizona Schools Facilities Board has managed similar projects, including the *Solar On Schools* grant,
28 which was funded through the Americans Recovery and Reinvestment Act.

⁵ Therefore, under this proposed program, schools that have higher scores on the Project Prioritization Matrix
will receive project funding first within each funding cycle. If a project is left unfunded, the application will
automatically roll into the next funding cycle and be ranked accordingly.

⁶ In Decision No. 71459 (Jan. 29, 2010), the Commission approved APS's proposal to offer government and
school customers a separate distributed energy category to ensure that these institutions were not "crowded
out" of Renewable Energy Standard ("RES") incentive funding by other commercial projects.

1 reduce or eliminate up-front costs for governmental institutions, and would accommodate the
2 unique procurement needs of these customers.

3 **II. THE SCHOOLS AND GOVERNMENT PROGRAM DESCRIPTION**

4 The Schools and Government Program will facilitate the implementation of three on-
5 site technology categories: PV; solar daylighting; and solar thermal (solar water heating,
6 solar space heating and solar space cooling). To qualify for incentive funding under the
7 Schools and Government Program, each technology must meet specific program requirements
8 and each system must meet the technology requirements described in APS's Distributed
9 Energy Administration Plan.⁷ An overview of the program requirements and description are
10 provided below. For more specific details, see attached Exhibit A.

11 **A. Photovoltaic Projects**

12 Historically, schools and governmental institutions within APS's service territory have
13 demonstrated high levels of interest in installing on-site PV systems. In 2009, over 30
14 schools and governmental institutions submitted requests for incentive funding under the
15 Company's existing programs, and in the first quarter of 2010, the number of applications
16 nearly doubled those receiving funding in 2009. The premise of the proposed Schools and
17 Government Program is to build on the lessons learned and the experience derived from the
18 Company's current renewable energy incentive programs and participating customers.

19 The Schools and Government Program proposes two tiers for qualifying PV projects
20 that dictate the maximum system size that can be installed at the customer's site. The first tier
21 for PV projects is proposed for facilities totaling less than 75,000 square feet, which would
22 typically include elementary schools (kindergarten through eighth grade). Under this first
23 tier, PV systems would not be allowed to exceed 350 kilowatts per meter and could not
24 exceed 100 percent of the facility's previous year's power consumption. The second tier is
25 designed for facilities totaling greater than 75,000 square feet, which is typically the size of
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28 ⁷ APS's Distributed Energy Administration Plan was approved as part of the Company's 2010 Implementation Plan. Decision No. 71459 (Jan. 29, 2010).

1 secondary school facilities. Under this second tier, PV systems could not exceed 550
2 kilowatts per meter and 100 percent of the facility's previous years power consumption.

3 School districts and governmental institutions would be able to apply for funding for
4 up to three PV projects during the calendar year. This proposed program would use a
5 production based incentive ("PBI") contract, called a Credit Purchase Agreement ("CPA"), to
6 fund projects. The PBI methodology would allow APS to have a lower annual budget and,
7 thus, a lesser impact on the annual RES adjustor. The proposed PBI incentive levels, along
8 with the elimination of up-front costs through third-party financing or utility ownership,
9 should facilitate an expeditious and straightforward process for installation of PV at schools
10 and governmental institutions.

11 **B. Solar Daylighting**

12 Solar daylighting uses natural light to illuminate interiors of buildings and reduces heat
13 produced from traditional lighting sources. While solar daylighting is one of the most cost-
14 effective, energy-offsetting technologies to install at a new facility or one undergoing
15 modifications, current customer awareness of this technology is only emerging, resulting in
16 slow market adoption within APS's service territory. APS is proposing a number of
17 approaches to educate schools and governmental institutions regarding the benefits of
18 daylighting and to incent them to adopt this technology. For example, APS is proposing that
19 the current standard annual incentive program cap be doubled for the Schools and
20 Government Program, thus resulting in a maximum of \$150,000 annual up-front incentive
21 payment per school or governmental institution.⁸

22 In addition, during the first year of the Schools and Government Program, the
23 Company proposes to install one solar daylighting system for every PV system installed.
24 Each school district or governmental institution that installs a PV system and qualifies for
25 incentive funding under this program would receive a solar daylighting installation (up to
26 \$30,000) at no cost to the customer. During the second and third year of the program, APS is

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28 ⁸ The up-front incentive payment is equivalent to \$0.20 per kilowatt savings for the first year of the program
and \$0.17 per kilowatt savings for the second and third years of the program.

1 proposing that solar daylighting installations receive a bonus incentive equivalent to 25% of
2 the annual daylighting incentive be offered to participating schools and governmental
3 institutions.⁹ This bonus incentive could assist in offsetting the additional costs associated
4 with retrofit installations.

5 **C. Solar Thermal Projects**

6 Solar thermal systems combine efficient techniques for capturing the sun's heat with
7 modern plumbing systems to produce cost-effective hot water. These systems also reduce the
8 need for electricity to heat or cool buildings. The non-residential adoption of solar thermal
9 technologies within APS's service territory has been significantly less than that of PV
10 installations.

11 Solar thermal technologies have a more restricted application because they require a
12 unique building usage profile. For solar space heating or space cooling to be a viable option,
13 a school or governmental institution must have a year-round heating or cooling load. In many
14 school districts, students no longer use the showers at school, and cafeterias use minimal hot
15 water because the food is often catered. Thus, solar water heating is only a viable solution for
16 select schools and governmental institutions.

17 Additionally, one of the biggest hurdles schools and governmental institutions face
18 when seeking to integrate solar thermal technology is providing a strong enough financial
19 return to overcome the higher level of risk third-party owners have associated with these
20 technologies. The higher level of risk is associated with the fact that solar thermal
21 technologies are more complex systems, which are subject to failure and require increased
22 maintenance, as compared to both PV and daylighting systems.

23 In an effort to increase the number of commercial solar thermal installations, APS is
24 proposing that the term of the current PBI be modified to allow for an accelerated financial
25 return to the schools and governmental institutions.¹⁰ In addition, APS will not limit the size

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27 ⁹ For example, if a school or governmental institution installed a project that qualified for \$100,000 in
incentive funding, they would receive an additional \$25,000 as a bonus incentive.

28 ¹⁰ With shorter contract terms, the net present value of the declining incentive increases in overall value during
the earlier years.

1 of solar thermal systems or the number of facilities that can install solar thermal technology
2 within a school district or governmental institution in a single year. APS encourages the
3 aggregation of solar thermal projects within a single district or governmental institution to
4 facilitate a more cost-effective installation process and financing option.

5 **III. Financing Solar Projects**

6 The elimination of up-front costs of solar projects for school districts and elimination
7 or reduction of these costs for governmental institutions were key components of the
8 programs contemplated under the relevant terms of the Settlement Agreement. With the
9 dramatic impact of the economic recession on the state's and other governmental institutions'
10 budgets, the ability for school districts or governmental institutions to avail themselves of
11 capital to install renewable facilities is doubtful.

12 Additionally, as a tax-exempt entity, school districts and governmental institutions are
13 unable to receive the financial benefits of the federal tax credits and Arizona state tax credits.
14 These tax benefits can represent a financial offset of over 50 percent of the total cost of the
15 solar system. It is common for school and governmental institutions' solar projects to cost
16 over one million dollars; the inability to realize the federal and state tax credits has a
17 significant impact on the financial responsibility of these entities, and requires substantially
18 larger first-year net cost. While commercial customers in APS's territory with tax liability
19 can often see favorable financial returns on their solar investment in less than five years,
20 APS's schools and governmental customers traditionally see a payback period that is at least
21 doubled – with a significantly higher up-front cost.

22 As a result, these customers are primarily interested in a business option for the more
23 expensive PV and solar thermal systems, where a third party can monetize the tax credits to
24 make the installation financially feasible. Stated another way, this allows schools and
25 governmental institutions to lease equipment to acquire renewable energy, rather than
26 purchasing the facilities. Under APS's proposal, customers participating in the program
27 would be able to choose between a third-party ownership option or the proposed utility-
28 ownership option, based on their individual financial circumstances and other needs. Under

1 both options, the customer obtains the benefits of renewable resources without the need for
2 significant up-front investment. For solar daylighting systems, which require significantly
3 less capital investment, schools and governmental institutions may be interested in obtaining
4 financing for those projects.

5 To address the specific needs of these customers, APS is proposing three customer
6 options to eliminate/reduce up-front costs for schools and governmental institutions:
7 1) continued use of a third-party ownership option; 2) utility-ownership option; and 3) solar
8 daylighting financing option, as described below.

9 **A. Third-Party Ownership Option**

10 In 2009 and 2010, APS observed that nearly all applications for PV systems that were
11 submitted by schools or governmental institutions used a third-party ownership option, like
12 that of a SSA. Through a SSA, schools and governmental institutions can receive the benefits
13 of the tax credits by contracting with a third-party system owner who, in turn, passes the tax
14 benefits on to the school or governmental institution. The third-party owners traditionally
15 require no up-front payment from the customer; rather, the customer pays the third-party
16 owner for the lease of the system equipment and the customer benefits from the energy
17 produced by the on-site PV system. The current market indicates that a SSA option is
18 successful in accomplishing its defined objectives, as it allows for the timely installation of
19 PV systems and eliminates the up-front financial barrier for the customer.

20 The ability of schools and governmental institutions to make use of the SSA approach
21 is largely dependent upon the outcome of the *SolarCity* case.¹¹ Should the outcome of the
22 matter result in regulatory requirements for these types of business options, or if subsequent
23 litigation should result in further regulatory uncertainty, the ability of schools and
24 governmental institutions to timely utilize SSAs may be impacted.

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28 ¹¹ As of the date of this filing, the *SolarCity* matter is pending at the Commission (Docket No. E-20690A-09-0356).

1 **B. Utility-Ownership Option**

2 To provide school and government customers with additional financing options that
3 eliminate the up-front cost of solar facilities, APS is proposing to make available a utility-
4 ownership option for a limited percentage of installations (measured in total installed PV
5 capacity) for the proposed Schools and Government Program. To maximize opportunities for
6 solar installers and developers, no more than one-half of the installed PV capacity would be
7 able to participate under the utility-ownership option. More specifically, the Company's
8 participation in the program would be limited to a total of 17 megawatts of PV resources.
9 Because this option depends solely upon customer choice, APS ownership is not assumed for
10 half of the PV installation under the Schools and Government Program; rather, this is the
11 maximum permitted. As previously noted, nearly all of the PV system applications submitted
12 to APS in 2009-2010 used a third-party ownership or SSA option. As these trends are
13 expected to continue, APS does not expect to have strong demand for the utility-ownership
14 option.

15 For the limited projects that would potentially participate in this financing mechanism,
16 APS proposes to competitively solicit PV system installation under this program utilizing the
17 same utility ownership arrangement that is being offered in the recently approved Community
18 Power Project – Flagstaff Pilot program.¹² PV systems would be connected directly to the
19 distribution grid on the customer's property, and the customer would be billed for a portion of
20 their usage equivalent to the output of the PV system, with a specific rate designed to mirror
21 the benefits of a customer owned renewable resource. The proposed School and Government
22 Solar Program Rider Rate Schedule is attached as Exhibit B.

23 Like the Flagstaff Pilot, both the installation and operating and maintenance
24 components through this utility-ownership option would be managed through third-party
25 installers/developers. Renewable energy from the utility-owned solar systems would not
26 count toward the RES distributed energy requirements; rather, they would be applied to the
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¹² Decision No. 71646 (Apr. 14, 2010).

1 Company's overall RES requirement. An additional benefit of the proposed APS ownership
2 arrangement is the elimination of the need to use incentive dollars to fund the PV system.
3 These tenants of the proposed limited utility-ownership option are consistent with the
4 "guiding principles" of the Solar Alliance regarding utility ownership.¹³

5 Consistent with the Settlement Agreement¹⁴ and Commission Decision No. 71502 (AZ
6 Sun decision), APS is proposing that the cost of ownership (or revenue requirement) for this
7 option, including depreciation, property taxes, income taxes, operating and maintenance
8 expenses, and financing costs using the then-currently authorized cost of capital, would be
9 recovered through the RES adjustor until the investment is included in base rates or other
10 recovery mechanisms.¹⁵

11 C. Project Financing Options

12 1. *Solar Thermal Projects.* While the third-party ownership option has
13 been popular for the installation of solar thermal projects, through collaborative discussions
14 with stakeholders, it became evident that various local financing institutions have recently
15 expressed an increased level of interest in financing non-residential solar thermal systems.
16 National financing partners, such as Honeywell, are currently financing solar thermal projects
17 both in Arizona and throughout the United States. Through the modification of the non-
18 residential solar thermal incentive design that is proposed in the Schools and Government
19 Program, the Company anticipates that third-party financing for these projects would be more
20 readily available.

21 2. *Solar Daylighting Projects.* The costs associated with solar daylighting
22 installations are significantly less than that of PV and solar thermal installation costs. As a
23 result, school districts and governmental institutions have expressed a preference to purchase
24 and own these systems. For customers interested in a financing option to install solar

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26 ¹³ See May 18, 2009 letter from Carrie Cullen Hitt, President of the Solar Alliance, filed in the Flagstaff Pilot docket, Docket No. E-01345A-09-0227.

27 ¹⁴ Adopted in Decision No. 71448 (Dec. 30, 2009); see Section 15.7 of Exhibit A.

28 ¹⁵ The proposed budget assumes the revenue requirement for APS-owned solar is captured in rate base and no longer collected through the RES adjustor following rate case adjudications anticipated for July 2012 and July 2014.

1 daylighting, APS will partner with National Bank of Arizona ("NBAZ") to offer customers a
2 lease option that eliminates up-front cost. Solar daylighting projects under the proposed
3 Schools and Government Program would be eligible for a five to seven year operating lease,
4 with the option to purchase the system at fair market value at the end of the lease term.

5 Although the specifics of this financing option will not be finalized with NBAZ until
6 Commission approval is received for the program, APS's proposed solar day lighting
7 financing option would be similar to the Company's Demand Side Management financing
8 program currently offered through a partnership with NBAZ, which was approved in
9 Decision No. 71460.¹⁶ Financing would be made available up to a specified limit, and to
10 qualify for financing, the customer/applicant's solar daylighting project would have to meet
11 program requirements and NBAZ's and APS's minimum underwriting standards. APS would
12 provide a partial guarantee for the financing program to help mitigate potential credit losses
13 associated with these financing programs.

14 **IV. Program Budget**

15 The Settlement Agreement targets a specific megawatt hour production requirement
16 for solar facilities installed on schools. There is no similar provision for government projects,
17 so the budget is bifurcated between the schools and governmental institutions accordingly, as
18 discussed below. The impact of the proposed 2011 budget for the average residential
19 customer would be approximately \$0.30 added to the RES adjustor. Should the funding for
20 the Schools and Government Program be exhausted, customers can also participate in the
21 Company's other RES incentive programs, where they would be subject to a competitive
22 selection process. For a more detailed discussion of the proposed budget, see Exhibit A.

23 **A. School Projects Budget**

24 Under the terms of the Settlement Agreement, the goal of the school program is to
25 install projects that result in 50,000 megawatt hours of annual energy generation or savings
26 within 36 months of program approval by the Commission. To achieve this targeted capacity,
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28 ¹⁶ Issued Jan. 26, 2010.

1 APS is requesting a cumulative (three year) program budget of up to \$22.9 million, with a
2 cumulative twenty year cost of up to \$87.9 million for the portion of the proposed program
3 directed at schools.

4 In 2011, the first year of the program, APS is requesting budget approval of up to \$5.6
5 million. Of the \$5.6 million budget, approximately \$4.3 million would be set aside for PV
6 projects and divided equally between five funding cycles. The remaining available first-year
7 budget would be approximately \$1.3 million, which APS anticipates would be spent on solar
8 thermal and solar daylighting projects.

9 To meet the Settlement Agreement requirement to offset consumption and/or generate
10 50,000 megawatt hours within 36 months of program approval, APS anticipates that the first
11 and second years of the program would require the largest lifetime budget commitments.
12 This is a result of APS's need to approve solar thermal and PV projects in the first two years,
13 to ensure that the projects are operational within the 36-month timeframe defined under the
14 Settlement Agreement. The cumulative budget requirement for years two and three is
15 projected to be \$17.3 million.

16 **B. Government Projects Budget**

17 Because of the robust participation in current RES programs by governmental
18 institutions, APS is proposing that funding for solar projects for governmental institutions be
19 limited to twenty-five percent of the total annual funding available for school projects. APS
20 believes that this budget would provide adequate funding for this customer segment.
21 Incentives for these projects would be allocated on a first-come, first-reserved basis,
22 irrespective of technology. The cumulative (three year) budget is projected to be up to \$6.1
23 million.

24 Based on this proposed budget, government projects qualifying under the program
25 would have a first-year (2011) budget of up to \$1.6 million.

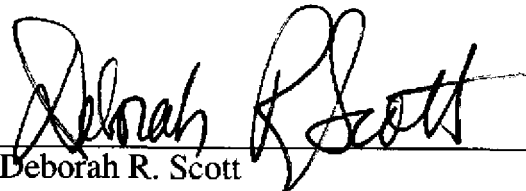
26 **V. Conclusion**

27 APS believes that the proposed School and Government Program would provide
28 additional opportunities for schools and governmental institutions to take advantage of RES

1 incentive funds to install solar technologies on their facilities. The proposed financing
2 options address the unique needs of this tax-exempt, publically-funded customer base, and
3 provide these customers with alternatives to eliminating or reducing the up-front costs of
4 renewable energy. For these reasons, APS respectfully requests that the Commission issue a
5 decision that:

- 6 A. Approves the Schools and Government Program, as described herein;
7 B. Approves the Schools and Government Program budget for 2011; and
8 C. Approves Rate Schedule SGSP, the Schools and Government Solar Program
9 Rider Rate Schedule.

10 RESPECTFULLY SUBMITTED this 29th day of April, 2010.

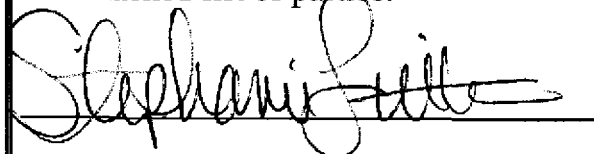
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Exhibit A



Arizona Public Service Company

**Arizona Public Service
Proposed Schools and Government Program**

April 29, 2010

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Exhibit A
Arizona Public Service
Proposed Schools and Government Program
April 29, 2010

I. Introduction

In Decision No. 71448, the Arizona Corporation Commission (“ACC” or “Commission”) directed Arizona Public Service Company (“APS” or “Company”) to develop two new Renewable Energy Standard (“RES”) programs. The first, the Schools Program, required APS to create “a new program for on-site solar energy including photovoltaics, solar water heating and daylighting, at grades K through 12 public (including charter) schools in its service territory that eliminates up-front customer costs.” Further, school projects requesting incentive funds under this new program will be prioritized based on criteria established by APS in collaboration with the Arizona Schools Facilities Board, showing preferential funding to economically disadvantaged school districts. These schools are identified by having low bonding capacity per pupil and high percentages of their student population participating in the Free and Reduced Lunch Program. In total, the school projects funded through this program are required to offset 50,000 megawatt hours (“MWh”) of annual consumption or generation within 36 months of the Commission’s approval of the Schools Program. The second new program, the Government Program, required APS to design a “new program for governmental institutions for distributed solar energy, including photovoltaics, solar water heating and daylighting, to substantially reduce or eliminate up-front customer costs.”

In this filing, APS is proposing its new Schools and Government Program (“Program”) which incorporates both the proposed Schools Program and the Government Program into a single new program that meets the objectives of sections 15.5 and 15.6 in Decision No. 71448. The budget, annual energy savings, and generation components of this combined Program will be tracked separately to ensure that APS achieves the 50,000 MWh Schools Program goal and that adequate funding is available to meet this objective.

APS’s proposed Program will facilitate the implementation of three on-site technology categories: photovoltaic (“PV”), solar daylighting (“SDL”) and solar thermal (“ST”) technologies. In total, APS has requested a first year budget of up to \$5.6 million for school projects and up to \$1.6 million for government projects, resulting in a 20-year

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cost of up to \$87.9 million and \$20.9 million, respectively. (See Attachment A for the Schools and Government Program - Annual RES Budget and RES Adjustor Impacts.) APS anticipates a total of approximately 26 school and 10 governmental institution PV projects, over 40 SDL projects, and five ST projects will be funded in the first year of the Program. Future year project diversity will likely depend on the results of the first year's deployments.

To assist in the design of this Program, APS solicited feedback from key stakeholders including the Arizona Schools Facilities Board, Mohave Educational Services Cooperative, school superintendents and facilities managers within APS's service territory, as well as financing institutions and technical experts in the PV, SDL and ST industries. With the feedback received from stakeholder discussions and in conjunction with the Company's existing RES Implementation Plan, APS designed this Program to allow for the easy adoption of PV, SDL, and ST technologies with no up-front costs to eligible schools or governmental institutions and accommodates the unique procurement needs of these customers. As noted in the Settlement, APS explored the option of issuing a request for proposal ("RFP") for solar installations on multiple facilities. Through the Company's discussions with stakeholders, it was determined that this service is currently met in the market by specific agencies with a greater familiarity of the schools' unique procurement processes. Therefore, APS believes that this RFP process should not be included in its proposed Program.

APS proposes a blend of financing tools to support the installation of PV systems utilizing both Solar Service Agreements ("SSAs")¹ and utility ownership, and includes the use of SSAs to finance the installation of ST systems to eliminate up-front costs incurred by schools or governmental institutions. In addition, APS is proposing a partnership with National Bank of Arizona ("NBAZ") to facilitate SDL installations with no upfront costs to customers through a designated lease program.

In order to qualify for incentive funding under this Program, each technology has specific program requirements and procedures, as described below.

¹ As of the date of this filing, the SolarCity Application is pending at the Commission. (Docket No. E-20690A-09-0346)

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II. Program Description and Requirements

A. Photovoltaic Projects

Historically, schools and governmental institutions within APS's service territory have demonstrated high levels of interest in installing on-site PV systems. In the Company's 2009 Schools and Government Program, over 30 schools and governmental institutions received incentive funding and in the first quarter of 2010 the volume of applications received nearly doubled those funded in 2009. The proposed Program is based on the key lessons learned and experience derived from the Company's current Renewable Energy Incentive Program ("REIP")², input from participating customers and dialogue with stakeholders familiar with both schools and solar technologies.

The Program proposes two tiers for qualifying PV projects on schools and governmental institutions that dictate the maximum system size that can be installed at the customer's meter. The first tier for PV projects is for facilities totaling less than 75,000 square feet ("SF"). School facilities within this square footage are typically seen as kindergarten through 8th grade schools ("K-8"). Under this first tier, installed PV systems cannot exceed 350 kilowatts ("kW") per APS revenue meter and cannot exceed 100 percent of the facility's previous year of consumption at that same meter. The second tier for PV projects is for facilities totaling greater than 75,000 SF. School facilities within this square footage are typically seen as 9th through 12th grade ("9-12") schools. Under this second tier, installed PV systems cannot exceed 550 kW per APS revenue meter and cannot exceed 100 percent of the facility's previous year of consumption at that same meter. These two tiers were defined through feedback received from stakeholders describing varying loads on facility usage patterns and geography. Urban K-8 schools typically have a lower year round usage and less square footage compared to rural K-8 schools. Further, urban 9-12 schools have higher annual loads and a greater square footage as compared to the urban K-8 schools. In comparison, rural schools are often used for community functions during non-school days and hours, and

² In Decision No. 71459 (January 29, 2010), the Commission approved APS's proposal to offer government and school customers a separate distributed energy category for schools and governmental entities to ensure that these institutions were not "crowded out" of RES incentive funding by other commercial projects.

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the facilities have a larger square footage because of the centralized design of the district. For example, it is more common to find a single K-12 facility in a rural district than in an urban district, where separate facilities for K-8 and 9-12 programs are more typical. Additional details about the incentive and financing options for PV systems through this Program can be found in Section III.A. of this report.

B. Solar Daylighting Projects

SDL is one of the most cost-effective renewable energy technologies to install at new facilities or those undergoing modification/renovation. Unfortunately, market awareness is only now emerging and construction evaluation of the SDL installations are often value-engineered out of projects, resulting in slow market adoption within APS's service territory. Installations during modernization projects or new construction projects provide approximately a six-year payback for schools and governmental institutions under the current economic paradigm. A retrofit project can be more costly and schools and governmental institutions may incur a slightly longer payback period. Some school districts, including Sedona-Oak Creek in Yavapai County, have had an overwhelmingly positive experience with SDL installations at their new facilities. The most beneficial locations for installations tend to be gymnasiums, libraries or cafeterias because of their typical existing hi-bay light fixtures and extended hours of operation. An average SDL system in a gymnasium can offset approximately 32,000 kWh per year. In addition to favorable financial returns, natural daylight offers the proven physical benefits of stimulating student learning, improving immune systems and increasing productivity³.

Additional details about the incentive and financing options for SDL systems through this Program can be found in Section III.B. of this report.

C. Solar Thermal Projects

The non-residential adoption of ST technologies within APS's service territory has been modest. For example, domestic hot water usage at schools is generally minimal and subject to seasonality. Through collaborative discussions with school stakeholders,

³ Nicklas, Mike. "Analysis of the Performance of Students in Daylit Schools." (1996): n.pag. Web. 29 Apr 2010. <http://www.innovativedesign.net/paper.htm>

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APS was advised that students no longer use the showers at school and cafeterias are using less hot water because the food provided is often catered. Thus, solar water heating is only a viable solution for select schools and governmental institutions. In order for solar space heating or space cooling to be a viable option, a school or governmental institution must have a year-round heating or cooling load. Schools and governmental institutions that meet the ideal space cooling profile are generally located in Maricopa, Pinal, Pima, Yuma and La Paz counties. Schools and governmental institutions that meet the ideal space heating profile are located in Coconino, Navajo and Apache counties. ST technologies have a more restricted application because they require a unique building usage profile.

In an effort to increase the number of commercial ST installations in Arizona, APS will not limit the number of facilities that can install any ST technology within a school district or governmental institution in a single year. APS encourages the aggregation of ST projects within a single district or governmental institution to facilitate a more cost-effective installation process and financing option. Additionally, to accommodate the unique demands of each facility, APS will not limit the size of the ST systems installed.

Additional details about the incentive and financing options for ST systems through this Program can be found in Section III.C. of this report.

III. Project Incentives and Financing Methods

A. Photovoltaic Project Incentives and Financing

Customers participating in the Program will have the ability to choose between a third-party ownership option (SSA) or the proposed utility ownership option⁴, based on their individual financial circumstances and other needs. Under both options, the up-front costs are eliminated, while providing participating customers the benefits of renewable resources. The Company's participation in the Program under the ownership

⁴ To maximize opportunities for solar installers/developers, no more than one half of the installed PV capacity will be able to participate under the utility ownership option.

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option will be limited to a total of 17 MW of PV installations, which is half of the anticipated PV capacity deployed through this program.⁵

Additionally, Program participants are required to install kiosks, displays or other appropriate signage for PV installations, designed to increase awareness and for educating the public on renewable energy initiatives.

Third-Party Ownership Option

In APS's 2009 and 2010 Schools and Government program, the Company observed that nearly all submitted applications used a third-party ownership model like that of an SSA. Typically, schools and governmental institutions are unable to benefit from tax incentives designed to help decrease the overall cost of installing a renewable energy technology. However, through both a SSA and utility ownership, schools and governmental institutions can receive the benefits of the tax credits. The third-party owner/developer traditionally requires no upfront payment from the customer, rather the customer pays the third-party for the lease of the system equipment and the customer benefits from the energy produced by the on-site PV system. The current market demonstrates that an SSA model is successful in accomplishing its designed objective, as it allows for the timely installation of PV systems and eliminates the upfront financial barrier for the customer.

Under the third-party ownership option, the Program will use a production based incentive ("PBI") contract, known as a Credit Purchase Agreement ("CPA") to fund projects. The PBI methodology will allow APS to have a lower annual budget and thus a lesser impact on the RES adjustor. Through collaborative discussions with schools, technical, and financial stakeholders, it was clear that PV systems installed through this Program were best served by two PBI CPA terms, a 15-year incentive and renewable energy CPA ("15yPV") or a 20 year incentive and renewable energy CPA ("20yPV").⁶

⁵ Through the implementation of this Program APS is forecasting the installation of 34 MW of PV systems over the full three year deployment. If customers find favor in the utility ownership option, APS will limit the capacity installed under this option to one half of the program capacity.

⁶ The 15yPV PBI CPA between APS and the customer is a 15-year incentive payment to the customer and a 15-year REC payment for APS. A 20yPV PBI contract between APS and the customer is a 20-year incentive payment to the customer and a 20-year REC payment for APS.

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Under the 15yPV and 20yPV PBI CPA, APS proposes to offer a first year Program incentive level of \$0.170/kilowatt hour ("kWh") and \$0.155/kWh, respectively. These levels will decrease by 15 percent after each year of the Program through the 36-month Program term⁷. These levels are slightly higher than the existing non-residential PBI incentives to help accommodate the financial limitations and restrictions imposed upon the schools and governmental institutions. Schools and governmental institutions can apply for funding for up to three PV projects during the calendar year.

Utility Ownership Option

To provide customers with additional financing tools, APS will make a utility-ownership option available for up to 50 percent of installations for the proposed Schools and Government Program. This option will be implemented only at the customer's election and is not required in the Program design or for customers to receive solar energy. As previously noted, nearly all of the PV system applications submitted to APS in 2009-2010 used a third-party ownership or SSA option. APS will cap any utility-ownership participation at no more than half (17 MW) of the anticipated PV systems seeking implementation through this program.

For the projects that would potentially participate in this financing mechanism, APS proposes to competitively solicit PV system installation under this Program using the same utility ownership arrangement that is being offered in the recently approved Community Power Project – Flagstaff Pilot program⁸. Systems will be connected directly to the distribution grid on the customer's property, and the customer may choose to be billed for a portion of their usage equivalent to the output of the PV system on a specific rate schedule designed to mirror the benefits of a customer owned renewable resource. Both the installation and operating and maintenance components through this utility ownership option will be managed through third-party installers/developers.

⁷ After year one of the Program, the 15yPV PBI will decrease to \$0.145/kWh and the 20yPV PBI will decrease to \$0.132/kWh. After year two of the Program, the 15yPV PBI will decrease to \$0.123/kWh and the 20yPV PBI will decrease to \$0.112/kWh

⁸ Approved in Decision No. 71646 (April 14, 2010).

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An additional benefit of the proposed APS ownership arrangement is the elimination of the need to use incentive dollars to fund the PV system, reducing the complexity of the proposed Program funding. APS believes that with the recent reduction in PV system costs and the continued host customer revenue over the PV system's operational life, the utility ownership option will result in equivalent or favorable economics for its customers when compared to the third-party ownership option. The tenants of APS's ownership option are designed to be consistent with the "guiding principles" of the Solar Alliance regarding utility ownership⁹.

The revenue requirement that APS proposes to recover for each 1 MW of installed capacity is estimated to be \$600,000 in the first year, \$200,000 in the last year of the 30-year life of the project, which totals \$11 million, based on an assumed average capital cost of \$5.00/watt and other finance, tax and operating cost assumption. Recently, APS has seen proposals with the average cost below \$5.00/watt. Therefore, the assumed average capital cost may be adjusted to reflect a decrease in total cost per installed watt.

APS is proposing that the revenue requirement for the utility ownership option of the Program, including depreciation property taxes, income taxes, operating and maintenance expenses and financing costs, using the then currently authorized cost of capital, would be recovered through the RES adjustor until the investment is included in base rates or other recovery mechanism, consistent with Decision No. 71448.

B. Solar Daylighting Incentives and Project Financing

The Company seeks to increase SDL installations within its service territory. To do so, through this Program, APS will double the current standard annual incentive program cap, resulting in a maximum of \$150,000 in annual incentive funding per district or governmental institution. Additionally, SDL projects will remain eligible for an annual up-front incentive ("UFI") payment up to \$150,000 per year per district or

⁹ See May 18, 2009 letter from Carrie Cullen Hitt, President of the Solar Alliance, filed in the Community Power Project - Flagstaff Pilot Docket No. E-01345A-09-0227.

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governmental institutions. The UFI payment is \$0.20 per kWh savings¹⁰ for the first year of the Program and \$0.17 per kWh savings for the second and third years of the Program.

Year-One Solar Daylighting System Deployment Drive

APS recognizes that schools and governmental institutions currently participate in the REIP primarily through the installation of PV systems. APS believes that slow market adoption of SDL is largely due to a lack of market awareness. In order to bring market attention to the benefits of SDL, during the first year of the Program, the Company proposes to install one SDL system for every PV system installed. For each school district or governmental institution that installs a PV system and qualifies for incentive funding under this Program, that customer will receive one SDL installation up to \$30,000 at no cost to the school, school district or governmental institution. The school district or governmental institution can choose to have this SDL system installed at the facility where the qualifying PV system is installed, or they can choose a different facility within their school district or governmental institution within APS's territory. The SDL systems will be installed after the customer's qualifying PV system installation is complete and has passed final APS inspection. If the school district or governmental institution chooses to install the SDL system through this offer, the customer must then select a SDL contractor and submit their proposal to APS for approval and payment.

Through this proposed Program, customers opting to receive a SDL installation through this offer shall be required to investigate APS's Energy Solutions for Business program and receive a Direct Install proposal on other potential energy conservation measures at the facility. APS strongly recommends schools and governmental institutions implement all measures from this proposal with simple paybacks of four years or less. APS believes this will continue to keep the schools and governmental institutions informed about current energy efficiency options available to optimize their potential future energy savings.

¹⁰ SDL kWh savings is determined by APS's Energy Savings and Designed Output ("ES&D") report, available at <http://www.aps.com/files/solarRenewable/ESDReports.pdf>.

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Solar Daylighting Bonus Incentive

During the Company's discussions with multiple school districts' facility and operations managers, APS learned that the interest level for SDL is high. APS will offer a SDL bonus incentive ("Bonus Incentive") to a qualifying school or governmental institution installing a SDL system during the three years of the Program. This Bonus Incentive is equivalent to 25 percent of the annual SDL incentive. Therefore, if a school district or governmental institution installs a project that qualifies for \$100,000 in incentive funding, they will receive an additional \$25,000 as a Bonus Incentive. This Bonus Incentive will assist in offsetting the additional costs associated with retrofit installations and potentially assist in funding additional SDL projects in the following Program year.

APS believes the added incentives for SDL is specifically warranted because of the long-term importance of this technology in serving to reduce energy consumption with Arizona's current and future building inventory. Specifically, SDL is ideally suited for use with schools both for its ability to reduce energy consumption and for its ability to improve the student learning environment.

Partnership with Local Banks

The costs associated with SDL installations are significantly less than that of PV and ST installation costs. Therefore, school districts and governmental institutions prefer to purchase and own the SDL system. For customers interested in a "no up-front cost" financing option to install SDL, APS has partnered with NBAZ. APS's proposed SDL financing option will be similar to the Company's Demand Side Management¹¹ ("DSM") financing program currently offered through a partnership with NBAZ. The proposed partnership will offer customers a lease option that has no up-front cost.

To qualify for financing, the SDL project requirements are comparable to those outlined in the Company's NBAZ DSM program and therefore can be financed under similar terms. However, rather than a five-year operating lease term, SDL projects under

¹¹ Approved in Decision No. 71460 (January 26, 2010).

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this proposed Program will be eligible for a five to seven year operating lease, with the option to purchase the system at fair market value at the end of the lease term.

C. Solar Thermal Incentives and Project Financing

APS has identified that one of the biggest hurdles schools and governmental institutions face when seeking to integrate ST technology is providing a sufficient financial return to overcome the higher level of risk third-party owners have historically associated with ST technologies. To overcome this reported increased risk, stakeholders have communicated that the most desirable PBI CPA for solar space heating and solar water heating, currently offered through APS's REIP, is the PBI arrangement where the customer/developer receives payments over a 10 year period but is committed to the delivery of RECs over a 20 year term. Therefore, APS has created a 15 year PBI ("15yST") to provide similar financial returns demonstrated by the 10/20 PBIs, but without the added customer risk of front-loaded contract payments. Under APS's revised 15yST PBI, solar water heating and solar space heating projects will receive de-escalating PBI rates. During the first year of the Program, these technologies are eligible for an initial payment of \$0.076 per kWh saved. During each year of the customer's contract, the PBI payment will decrease by 10 percent annually. Therefore, those projects receiving an incentive of \$0.076 per kWh saved in the first year will receive an incentive of \$0.069 for their second year per kWh savings and continue to decrease annually by 10 percent. (See Attachment B for a summary of annual incentive payments for 2011 projects.)

Qualifying solar space cooling systems will be eligible through all CPA terms and respective PBI rates offered through the then current REIP. The PBI rate offered for space cooling systems is designed to decrease by 15 percent between 2012 and 2013; however, the incentive will remain constant through the term of the Program.

Third-Party Financing

Similar to the PV industry, the ST industry has demonstrated that third-party financing of commercial ST system installations is the most attractive financing method

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for customers and commonly accomplished through SSAs. ST SSAs have been popular because they also eliminate the up-front cost associated with installations. Through collaborative discussions with stakeholders, it became evident that various local financing institutions are expressing have recently expressed an increased level of interest in financing non-residential ST systems. Additionally, national financing partners such as Honeywell are currently financing ST projects in Arizona and throughout the United States. Through the modification of the non-residential ST incentive levels proposed in this Program, the Company expects to see an increase in interest from financial institutions to offer financing for ST projects.

IV. Program Budget

A. School Projects

For the first year of the Program, APS anticipates it will reserve 13.1 MW of PV-equivalent capacity, through the installation of PV, SDL and ST systems on school facilities, which translates to approximately 19,600 MWh. To achieve this targeted capacity,¹² APS is requesting a Program budget up to \$5.6 million for the first-year, which includes PBI payments for the assumed mix of technologies and up to 50 percent through the utility ownership option for PV systems.

In order to meet the Settlement requirement to offset consumption and/or generate 50,000 MWh within 36 months of Program approval, APS anticipates that the first and second years of the Program will require a majority of the program funds to ensure the projects are online by the end of the 36-month period.

For the second and third years of the Program, APS anticipates it will reserve approximately 20.2 MW of PV-equivalent capacity through the installation of PV, SDL and ST systems on school facilities, which will achieve APS's requirement of 50,000 MWh by the end of third year. To achieve this targeted capacity, APS is requesting up to

¹² The 13.1 of PV-equivalent capacity target for installations on school facilities for assumes a technology mix of 77 percent PV, 15 percent SDL and 8 percent ST. These percentages were created to encourage installations among all three technologies and a cap on PV system installations.

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\$10.5 million in Year 2 and up to \$6.8 million in Year 3, for a total 36-month Program cost up to \$22.9 million.

B. Government Projects

Although not specifically directed by the provisions of the Settlement, APS is applying some of the program guidelines proposed for the qualifying school projects, to the governmental institution projects funded through this proposed Program. Prioritization of projects within the program will be based on county population figures from the U.S. Census 2009 estimates. Applications will be selected from projects within counties with the lowest population and will gradually progress towards higher populated counties until the program funding thresholds have been met. Attachment C lists the population of Arizona counties within APS's service territory in ascending order to show the order in which government projects will be prioritized.

The total budget for qualifying governmental institution installations will be twenty-five percent of the total annual funding available for school projects under the Program. While this budget is a fraction of that proposed for installations at school facilities, APS believes that its current incentive programs are well subscribed by governmental institutions and this proposed Program will support solar development in more rural parts of APS's service territory.

Based on this proposed budget, governmental institution projects qualifying under this Program will have a first-year budget up to \$1.6 million and a 20-year cost up to \$20.9 million, resulting in 8.3 MW of reserved PV-equivalent capacity, through the installation of PV, SDL and ST systems similar to the assumed technology mix for school facilities for the term of the Program.

Based on the Company's proposed Program budget outlined above, the total first year Program budget for both school and governmental institution installations is approximately \$7.1 million.

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V. Allocation of Incentive Funding

A. School Projects

Photovoltaic Projects

Funding for Program incentives will be divided into six nomination periods, aligned with those currently approved for Medium Projects under APS's 2010 RES Implementation Plan¹³. In the first year of the Program, applications for projects will be accepted beginning with the second annual nomination period. This two-month postponement is designed to ensure that all school districts have adequate time to begin their procurement process and submit applications before APS reserves any qualified PV incentive funding under this Program. Years two and three of the Program will utilize all six annual nomination periods.

Within each funding cycle, APS will receive and rank each customer's PV application for Program participation based on the project's score on the School Project Prioritization Matrix for qualifying school projects. (See Attachment D for a summary of the School Project Prioritization Matrix.) APS has collaborated with the Arizona Schools Facilities Board to design the School Project Prioritization Matrix. This matrix is designed to ensure that school districts that have historically had limited access to APS's distributed energy funding would not be "crowded out" and receive preferential funding. Therefore, under this proposed Program, school facilities that have higher scores on the School Project Prioritization Matrix, will receive project funding first within each funding cycle. If a project is left unfunded, the application will automatically roll into the next funding cycle and be ranked accordingly.

Solar Daylighting Projects

The SDL portion of the proposed Program is not competitive and does not require the completion of the School Project Prioritization Matrix. Any SDL projects that request funding will be approved in the order in which they were received. Therefore,

¹³ Medium Project funding described in APS's 2010 RES Implementation Plan is divided into the following six nomination periods: January through February, March through April, May through June, July through August, September through October, and November through December.

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there are no funding cycles for SDL projects. Projects funded during the Program period are eligible to receive a Bonus Incentive, which will be paid at the same time as the standard incentive payment.

Solar Thermal Projects

The ST portion of the proposed Program is not competitive among the schools and does not require the completion of the School Project Prioritization Matrix. Any ST projects that request funding will be approved in the order in which they were received; therefore, there will be no funding cycles for ST projects.

B. Government Projects

Photovoltaic Projects

The first year budget for governmental institution PV PBI payments will be divided equally into two nomination periods. The nomination periods will be the same as those currently approved for Large Projects under APS's 2010 RES Implementation Plan¹⁴. Funding for qualified governmental institution projects within each funding cycle will be prioritized based on their location within Arizona counties of lowest population as previously noted

Solar Daylighting Projects

The SDL portion of the proposed Program is not competitive and is not prioritized based on total population. Any SDL projects that request funding will be approved in the order in which they were received until remaining annual funds are exhausted. Therefore, there are no funding cycles for SDL projects. Projects funded during the Program are eligible to receive a Bonus Incentive, which will be paid at the same time as the standard incentive payment.

Solar Thermal Projects

Similar to SDL, the ST portion of the proposed Program is not competitive and is not prioritized based on total population. Any ST projects that request funding will be

¹⁴ Large Project funding described in APS's 2010 RES Implementation Plan is divided into two semi-annual nomination periods: March 1st (reservations received through the end of February) and September 1st (reservations received from March through the end of August).

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approved in the order in which they were received; therefore, there will be no funding cycles for ST projects.

VI. Processing Customer Projects

A. Photovoltaic and Solar Thermal Projects

Upon receiving notification of funding approval, the Customer will have 30 days to submit a copy of a Qualified Provider document for school districts and similar documentation from governmental institutions to signify that the project is progressing and a developer has been selected. Following that 30-day window, the Customer will have an additional sixty days to sign and submit their CPA to APS. Simultaneously, the developer/installer will submit an Interconnection Application to APS. Upon approval of the Interconnection Application, the customer will be responsible to sign and return an Interconnection Agreement. Within 150 days of approved funding notification, the customer must submit to APS a proof of project advancement and within 180 days, the system output must be finalized and the contract quantity in the CPA amended, if necessary. The project must pass APS's inspection and the Authority Having Jurisdiction inspection within 365 days of reservation acceptance date.

B. Solar Daylighting Projects

To begin the process, customers must submit a completed and signed incentive reservation application. APS will notify the customer of funding approval and the customer will have 30 days to sign and return the APS CPA. Upon signing the CPA, the customer must obtain local permits and submit an Energy Savings and Designed Output report. The customer has 180 days to complete the installation from the time of reservation approval.

Attachment A

ARIZONA PUBLIC SERVICE CO.

Schools and Government Program - Annual RES Budget and RES Adjustor Impacts
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Annual RES Budget ¹	2011	2012	2013	2014	2015	5 Yr Total	20 Yr Total
Schools							
Photovoltaic ²	\$ 4,268,317	\$ 9,052,869	\$ 5,554,858	\$ 4,197,426	\$ 3,157,079	\$ 26,230,548	\$ 73,586,733
Solar Daylighting ³	\$ 1,267,259	\$ 1,267,259	\$ 1,062,509	\$ 500,000	\$ 500,000	\$ 4,597,026	\$ 12,097,026
Solar Thermal	\$ 38,000	\$ 148,500	\$ 134,500	\$ 121,050	\$ 108,945	\$ 550,995	\$ 2,203,980
Schools Total	\$ 5,573,575	\$ 10,468,628	\$ 6,751,867	\$ 4,818,476	\$ 3,766,024	\$ 31,378,570	\$ 87,887,739
Government Buildings							
Photovoltaic ²	\$ 1,050,306	\$ 2,209,469	\$ 1,314,814	\$ 975,485	\$ 715,420	\$ 6,265,495	\$ 16,996,794
Solar Daylighting ³	\$ 470,375	\$ 470,375	\$ 265,625	\$ 125,000	\$ 125,000	\$ 1,456,375	\$ 3,331,375
Solar Thermal	\$ 9,500	\$ 37,125	\$ 33,625	\$ 30,263	\$ 27,236	\$ 137,749	\$ 550,995
Government Total	\$ 1,530,181	\$ 2,716,969	\$ 1,614,064	\$ 1,130,747	\$ 867,656	\$ 7,859,619	\$ 20,879,164

RES Adjustor Impacts⁵

	2011	2012	2013	2014	2015
Residential Cap	\$ 0.30	\$ 0.55	\$ 0.33	\$ 0.23	\$ 0.17
Small C/I Cap	\$ 11.33	\$ 20.30	\$ 12.10	\$ 8.36	\$ 6.41
Large C/I Cap	\$ 33.99	\$ 60.91	\$ 36.29	\$ 25.07	\$ 19.23

¹ Assumes a technology mix of 77% PV, 15% SDI, and 8% ST.

² Assumes the revenue requirement for APS owned solar is captured in rate base and no longer collected through the RES adjustor following rate case adjudications 07/2012 and 07/2014.

³ Half of the system purchases associated with solar daylighting is attributed to the 2011 budget year, while the remaining half is accounted for in the 2012 budget year, which reflects the anticipated installation dates.

⁴ The budget estimated does not include costs for program implementation or administration. Those costs will be reflected as part of the Company's 2011 RES Implementation Plan.

⁵ Expressed in dollars per customer per billing cycle.

Attachment B

Schools and Government Program Incentives

<u>PRODUCTION BASED INCENTIVES</u>	<u>CPA Terms</u>			
Photovoltaic		\$/kWh		
	15	\$0.171	\$0.145	\$0.124
	20	\$0.155	\$0.132	\$0.112
Solar Space Heating/ Solar Water Heating		\$/kWh Savings		
	10	\$0.051	\$0.051	\$0.043
	15	<i>See Table 1 below</i>		
	20	\$0.045	\$0.045	\$0.039
Solar Space Cooling		\$/kWh Savings		
	10	\$0.116	\$0.116	\$0.099
	15	\$0.108	\$0.108	\$0.092
	20	\$0.104	\$0.104	\$0.088
<u>UP-FRONT INCENTIVES</u>		\$/kWh Savings		
Solar Daylighting		\$0.200	\$0.200	\$0.170

Table 1

Solar Space Heating and Solar Water Heating Production Based Incentive Payment Schedule

Year 1	\$0.076	\$0.076	\$0.065
Year 2	\$0.069	\$0.069	\$0.058
Year 3	\$0.062	\$0.062	\$0.052
Year 4	\$0.056	\$0.056	\$0.047
Year 5	\$0.050	\$0.050	\$0.042
Year 6	\$0.045	\$0.045	\$0.038
Year 7	\$0.041	\$0.041	\$0.034
Year 8	\$0.037	\$0.037	\$0.031
Year 9	\$0.033	\$0.033	\$0.028
Year 10	\$0.030	\$0.030	\$0.025
Year 11	\$0.027	\$0.027	\$0.023
Year 12	\$0.024	\$0.024	\$0.020
Year 13	\$0.022	\$0.022	\$0.018
Year 14	\$0.020	\$0.020	\$0.016
Year 15	\$0.018	\$0.018	\$0.015

Attachment C

County Population within APS's Service Territory - 2009 U.S. Census Estimates

LaPaz County	20,012
Gila County	52,199
Apache County	70,591
Navajo Country	112,975
Cochise County	129,518
Coconino County	129,849
Yuma County	196,962
Yavapai County	215,686
Pinal County	340,962
Pima County	1,020,200
Maricopa County	4,023,132

Attachment D
School Project Prioritization Matrix

Resource Index: per pupil bonding capacity	30	\$1,000-\$4,000 per student	30
		\$4,001-\$8,000 per student	25
		\$8001-\$10,000 per student	20
		\$10,001- \$15,000 per student	15
Free and Reduced Lunch Program Participation Per District: Percent of students participating in the Free and Reduced Lunch Program	30	80% - 100%	30
		60% - 79%	25
		40% - 59%	20
		20% - 39%	15
		10% - 19%	10
		1 % - 9%	5
Blended Solar Technologies at Customer Facility	10	PV, SDL, ST located on site	10
		PV and SDL or ST	8
		PV or SDL or ST	5
Demand Side Management Measures: Level of existing implementation of energy saving measures at the qualifying facility	30	Benchmarked facility or have an Energy STAR Portfolio Manager	5
		Energy Assessment (Energy Audit) has been performed	10
		Implementation of energy conservation measures as measured by APS Solutions for Business	15

Exhibit B



**RATE SCHEDULE SGSP
SCHOOLS AND GOVERNMENT SOLAR PROGRAM
RIDER RATE**

AVAILABILITY

This rate schedule is available in all territory served by the Company at all points where facilities of adequate capacity and the required phase and suitable voltage are adjacent to the sites served. The rate schedule was approved by the Arizona Corporation Commission ("ACC") in Decision No. XXXXX.

APPLICATION

This rate schedule shall apply to retail Standard Offer electric service for public elementary and secondary schools (K-12), including charter schools, and eligible government customers served under rate schedules E-32 S, E-32 M, E-32-L, E-32TOU S, E-32TOU M, and E-32TOU L or their successor rate schedules as approved by the ACC. All provisions of the customer's current applicable rate schedule will apply in addition to the charges and credits defined within this rate schedule. Rate Schedule SGSP may not be used in conjunction with any of the Company's partial requirements rate schedules.

Eligible government customers shall include sites that are owned and occupied by a federal, state, or local governmental entity as determined by the Company.

In addition, to be eligible for this rate schedule, the customer must be a participant in the Schools and Government Solar Program and therefore meet the program requirements including but not limited to (1) granting the Company an easement to install, own, operate and maintain a solar photovoltaic system on customer's premises and (2) meeting the technical requirements for the customer's premises.

TERM

This rate schedule shall remain in effect for a period of twenty years from its effective date unless cancelled or modified by the ACC prior to such date. Customers may discontinue participation in this rate schedule at any time without penalty.

SOLAR OPTIONS

The solar photovoltaic equipment size options available under this rate schedule shall be less than or equal to 350 kW-DC of nominal rated capacity for customers with facilities totaling 75,000 square feet or less at the site where the solar equipment is installed. For customers with facilities totaling more than 75,000 square feet the solar equipment shall be less than or equal to 550 kW-DC.

In addition, the solar equipment capacity (kW-AC) shall not be greater than 125% of the customer's connected load (kW-AC) as determined in accordance to rate schedule EPR-6 and A.A.C. R14-2-2302, nor shall the Solar Energy be more than 100% of the customer's metered kWh for the previous 12 months. Both of these limitations shall be determined at the time of initial qualification for the rate.

DETERMINATION OF SOLAR ENERGY

The Solar Energy, which is the nominal expected monthly kWh output from the photovoltaic solar equipment over time, shall be derived by multiplying the kW-DC rating of the photovoltaic equipment by an average monthly production factor (kWh-AC per kW-DC), as determined by the Company. The monthly production factor is 90 kWh-AC per kW-DC. For billing purposes, the Solar Energy in any month shall not exceed the customer's metered kWh used in computing the monthly bill. For totalized metering service provided under Service Schedule 4, the Solar Energy shall not exceed the metered kWh from the single service entrance section where the solar facility is installed.



**RATE SCHEDULE SGSP
SCHOOLS AND GOVERNMENT SOLAR PROGRAM
RIDER RATE**

RATES

The customer's monthly bill shall be calculated in accordance with their current applicable rate schedule except that:

- (1) The monthly bill will include a Solar Charge, which is the Solar Energy multiplied by the per kWh charges listed below. The Solar Charge per kWh shall remain the same for the term of this rate schedule.

Applicable Retail Rate Schedule	Solar Charge per kWh
E-32 S, E-32 M, E-32 L	\$0.09293
E-32TOU S, E-32TOU M, E-32TOU L	\$0.05855

- (2) The monthly bill will be based on the Customer's total metered usage net of the Solar Energy applied to all unbundled kWh charges in the customer's current applicable rate schedule, where the netted kWh shall not be less than zero. The netting shall be applied as follows:

- E-32TOU S, E-32TOU M, E-32TOU L - 50% of Solar Energy shall be netted from on-peak kWh, 50% from off-peak kWh. If the net kWh is less than zero for either the on-peak or off-peak period, the remaining kWh shall be netted from the other time period, where the netted amount shall not be less than zero.
- E-32 S, E-32 M, E-32 L - Solar Energy shall be netted from first tier kWh charges. If the netted kWh is less than zero the remaining kWh shall be netted against the second tier of kWh charges, where the netted amount shall not be less than zero.
- Any reductions to the monthly kWh billed under Schedule RES and Schedule EIS due to participation in green power schedules GPS-1, GPS-2, GPS-3 and Solar-3 will be capped at the customer's total metered kWh net of the Solar Energy provided in Schedule SGSP.
- The Solar Energy shall be netted against the metered kWh from the single service entrance section where the solar facility is installed and shall not be netted against metered kWh from any other metered kWh at other points of delivery at the same customer site or other sites.

TERMS AND CONDITIONS

Service under this rate schedule is subject to the Company's Terms and Conditions of the customer's parent rate schedule. This schedule has provisions that may affect the customer's bill.