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BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

KRISTIN K. MAYES, Chairman
GARY PIERCE
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP

IN THE MATTER OF ARIZONA PUBLIC SERVICE COMPANY'S REQUEST FOR APPROVAL OF SCHOOLS AND GOVERNMENT RENEWABLE ENERGY PROGRAM	DOCKET NO. E-01345A-10-0166
IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY FOR APPROVAL OF ITS 2011 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN AND DISTRIBUTED ENERGY ADMINISTRATIVE PLAN AND REQUEST FOR RESET OF RENEWABLE ENERGY ADJUSTOR	DOCKET NO. E-01345A-10-0262 **SUPPLEMENTAL FILING**

Arizona Corporation Commission
DOCKETED
OCT 13 2010
DOCKETED BY

On July 1, 2010, Arizona Public Service Company ("APS" or "Company") filed its 2011 Implementation Plan ("July Filing"), pursuant to the Renewable Energy Standard ("RES") Rules.[1] With this filing, the Company is updating the information regarding current RES funding, and proposing additions and modifications to the proposed July Filing based on intervening circumstances and updated information ("2011 Supplemental Filing"). Included in this 2011 Supplemental Filing are a proposed process outline and fee structure for interconnection studies for wholesale generators seeking interconnection to the APS energy distribution system; a revised methodology for budgeting actual annual financial obligations

[1] A.A.C. R14-2-1801 through 1816. R14-2-1813 requires the Company to file an annual Implementation Plan that describes how APS intends to comply with the RES Rules for next calendar year.

associated with in-service scheduling of Production Based Incentive ("PBI") projects; and updates to the Distributed Energy Administration Plan ("DEAP") and related schedules.

The Company is seeking a reduction of funding of $3.9 million from its July Filing for a total requirement of $92.5 million in 2011. The reduction of funding would decrease the monthly caps proposed in the July Filing for residential customers by approximately $0.18. APS submits the following for Commission approval: a Revised 2011 Implementation Plan (attached as Exhibit A); a Revised DEAP (attached as Exhibit B); a Revised Renewable Energy Adjustor Rate Schedule (attached as Exhibit C); and a Revised Schools and Government Solar Program Rider Rate (attached as Exhibit D).[2]

I. UPDATE ON 2010 RES INCENTIVE FUNDING

In July 2010, following the exhaustion of money in Funding Cycle Two (July 2, 2010-October 1, 2010), APS's queue of residential Distributed Energy ("DE") applications set to be reserved in the fourth quarter of 2010 continued to grow. The Company recognized the strong potential that by the time APS's 2011 RES Implementation Plan was reviewed and ultimately approved, a substantial portion of the 2011 residential incentive budget could be fully allocated. To address this issue, on August 2, 2010, APS filed an application asking for clarification of specific DE provisions detailed in Decision No. 71686.[3] That decision authorized APS to commit incentive funds from the 2011 RES budget for residential grid-tied photovoltaic ("PV") installations beginning on October 2, 2010. However, incentive payments on those systems reserved in 2010 that utilize the 2011 RES budget would not be made until after January 1, 2011.

As a result of the Company's August application, in Decision No. 71913,[4] the Commission ordered the following actions with respect to the residential PV incentive program, which have an effect on the July Filing:

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[2] For the convenience of the reader, the Company has attached redlined versions of the July Filing, the DEAP, the Revised Renewable Energy Adjustor Rate Schedule, and the Revised Schools and Government Solar Program Rate Rider as Exhibits E, F, G, and H, respectively.

[3] Issued April 30, 2010.

[4] Issued September 28, 2010.

- All applications received on and before September 20, 2010 are to receive a $1.95 per watt incentive, paid as funds become available.
- The $3.2 million of rollover funds from 2009 that were previously designated in the July Filing to offset Renewable Generation contract costs in 2011, will now apply to the 2010 residential incentives.
- Beyond those projects that will use available funds from 2010, the next 600 applications received on or before September 20, 2010 will be reserved in the fourth quarter of 2010 at $1.95 per watt with 2011 funding, but will not be paid until after January 1, 2011. Any remaining applications, received on or before September 20, 2010 (above those paid against the 2010 budget and the subsequent 600 applications receiving reservations in the fourth quarter of 2010) will receive reservations in the first quarter of 2011 (proposed 2011 Funding Cycle 2).
- Any applications received after September 20, 2010 will receive $1.75 per watt until approximately 4 megawatts of applications have been received at this level. Once applications for 4 megawatts of PV have been received, APS will advertise a reduced incentive of $1.60 per watt. Consistent with APS's July Filing, no applications received at $1.60 per watt will be reserved until April 1, 2011 or following the Commission's order in this docket, whichever comes first.

In response to Decision No. 71913, APS is now proposing to increase the residential DE incentive budget by $750,000. This increase is needed for the additional expenses associated with reservation of all applications received through September 20, 2010 at $1.95 per watt with 2011 funds. APS's budget filed in the July Filing had accounted for these reservations at $1.75 per watt.

Also included in this 2011 Supplemental Filing, APS has provided further clarification of the residential incentive program regarding the overall role of Funding Cycle 4 and the administration of the Rapid Reservation incentive offering. Those changes are also described in additional detail in Section V of the Revised DEAP (Exhibit B).

Additionally, based on observations made in 2010, and to continue encouraging increased penetration of solar adoption within the homebuilder market, APS proposes increasing the threshold for builder eligibility for model home marketing incentives. The proposed modification works to retain alignment between APS's energy efficiency and DE programs for homebuilders. Under the proposal, homebuilders would need to commit to building at least 25 percent of homes within the community with the distributed renewable technology. By raising this threshold, APS believes homebuilders will commit to installing more solar within a community.

II. PROPOSAL FOR IMPROVING THE WHOLESALE DISTRIBUTION INTERCONNECTION PROCESS FOR RENEWABLE ENERGY PROJECTS

The burgeoning renewable energy developer market and APS's need to evaluate the potential safety, reliability and power quality impact on the electric distribution system have presented challenges for both project developers and APS to support the interconnection of renewable generation resources to the APS distribution system. To address these issues, APS is proposing a process for wholesale distribution level interconnections that would identify specific milestones for renewable energy project developers during the project interconnection process, supplemented by deliverables provided by APS.[5] APS developed its proposal to clarify, improve and ultimately streamline the interconnection process for non-DE projects on the APS distribution system, consistent with the opportunity to assess appropriate application fees and engineering study fees authorized by the Commission in the generic docket that addressed the interconnection of a distributed generating facility.[6] In that decision, the Commission authorized utilities to charge an application fee for interconnection, if approved by the Commission, and further, to charge additional fees as needed to perform additional review or study work.[7]

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[5] The proposed process and fee structure would apply to those wholesale interconnections that do not fall under the Federal Energy Regulatory Commission ("FERC") processes, and would not apply to distributed energy projects located on a customer's premises.

[6] Decision No. 69674 (June 28, 2007).

[7] *Id.* at 19.

To support developers in their project evaluation and help APS manage the flow study or interconnection information study process, APS has developed a proposed process outline and a corresponding fee schedule. Under APS's proposal, renewable energy developers could request specific interconnection study work be completed by APS. The developers could request three different categories of study work, in increasing levels of detail, depending on the status of the project. A Level 1 study, called a "Non-FERC Feasibility Study", would provide a preliminary review of the potential impacts on the distribution system and costs that would result from the renewable project at the specific proposed point of interconnection. A flat fee of $5,000 would be charged for a Non-FERC Feasibility Level 1 study.

A Level 2 study, called a "Non-FERC System Impact Study", would consist of a full technical review of the proposed project's impact on the APS distribution system, including power flow, system protective device coordination, system protection schemes and voltage drop. This study would inform both the project developer and APS if any upgrades to APS's electric system are needed, and the associated costs, to build and interconnect the project as designed. The fee for a Non-FERC System Impact Study would be $15,000; however, if the developer has already had a Level 1, Non-FERC Feasibility Study completed by APS, the charge would be $10,000.

In a Level 3 study, called a "Non-FERC Facilities Study", the most comprehensive study work would occur. A Non-FERC Facilities Study would be required for every generator interconnecting to the APS system[8] and would include a detailed analysis of the actual facilities required based on the outcome of the Non-FERC System Impact Study, and would include the detailed costs of construction and construction milestones. For the Level 3 study, a developer would be required to make a deposit of $55,000. The study work would be billed at an hourly rate and trued-up at the conclusion of the study.[9] If the developer had

[8] Level 1 and Level 2 studies are not required but would be performed at the request of the developer. However, no project-specific interconnection information will be provided without a Level 1 study.

[9] APS currently charges $100 per hour for this type of engineering study work.

requested either a Level 1, Non-FERC Feasibility study, or a Level 2, Non-FERC System Impact study, the $55,000 deposit would be reduced by those fees already paid to APS.

APS believes that its proposed distribution-level interconnection process would identify potential issues with specific renewable projects at earlier stages in the development process. Ultimately renewable project evaluation could be streamlined by incorporating these processes into APS's procurement efforts, including those proposed in the Small Generation Standard Offer Program. All of the proposed fees are intended to cover the costs APS incurs to perform the tasks identified at each of the project development phases. Further, the more formalized process and associated fees are designed to help ensure that APS is providing the necessary resources in projects where the developers demonstrate commitment to project execution. All fees will be applied to the RES budget to offset resources necessary to provide these services. APS's proposed distribution interconnection process seeks to support the identification of the most viable renewable energy projects.

III. INCREASE IN SNOWFLAKE BIOMASS GENERATION

In 2008, APS executed a purchase power agreement ("PPA") to acquire approximately 60 percent of the renewable energy from a biomass power generation facility located in Snowflake, Arizona. Salt River Project ("SRP)" purchased the other portion of the facility's power. In July 2010, SRP requested termination of its contract with Snowflake White Mountain Power LLC, and the biomass company filed for Chapter 11 reorganization.

The renewable energy from the biomass project plays a significant role in APS's renewable compliance portfolio. To facilitate the continuing operation of the biomass plant, in September 2010, APS executed a one-year contract to purchase all of the plant's output. The additional energy, capacity, and above-market costs that are derived from the purchase of the entire output of the biomass plant are reflected in Exhibits 3A, 3B, and 3C of the Revised July Filing (respectively). The price paid by APS for the additional energy and capacity is consistent with APS's original contract for the first 60 percent of the plant's output. The specific price paid for this renewable energy is competitively confidential; therefore, the

information will be provided to Commission Staff pursuant to an executed protective agreement.

IV. MODIFICATIONS TO THE PROPOSED RES ADJUSTOR

Several of the program modifications previously described will affect the 2011 RES Adjustor proposed in the Company's July Filing, including:

- The reallocation of the $3.2 million of rollover funds from 2009 that were previously designated in the July Filing to offset Renewable Generation contract costs in 2011 to fund residential incentives;
- The additional capacity APS is acquiring from the Snowflake biomass plant in 2011; and
- The increase of $750,000 in the residential DE incentive budget for the additional expenses associated with reservation of all applications received through September 20, 2010 at $1.95 per watt with 2011 funds.

Additionally, APS has made several modifications that will affect the 2011 RES adjustor, as described below.

Based on the Company's improved understanding of when commercial projects become operational relative to the close of each nomination period, APS has modified its methodology for projecting when the Company will be required to make payments on PBI commitments. Currently, APS uses a mid-year convention that anticipates that half of the PBI projects are online by mid-year. However, the Company has come to realize that the full development cycle for PBI projects demands a longer timeline, and it is generally not feasible for large non-residential projects to be completed within a three-month period. (The "large project" category of the PBI program represents the greatest total financial commitment in any given year.) The new methodology assumes that new commitments be counted between six and nine months following the close of each nomination period for large projects, and six months following the close for each nomination period for medium projects. As a result, the portion of the PBI budget for new commitments has been reduced by $9.5 million.

Similarly, APS is applying this same financial commitment concept to its proposed Powerful Communities wholesale-distributed energy Feed-in Tariff program. The budget for this program in the July Filing assumed funding for payments would be available beginning at the first of the year. However, if the program is not approved until late 2010, it is not feasible that participating projects would be identified and constructed by the first of 2011. Therefore, APS is applying a mid-year convention for payments related to this program.

Finally, the Company has received further clarification as to the in-service scheduling and capacity of initial projects that are a part of the AZ Sun initiative. The effect of this on the 2011 budget is modest, and carries more significance in 2012-2015 relative to the proposed in-service dates of AZ Sun projects.

The total of the proposed changes results in reducing the 2011 RES budget by $3.9 million. The result is a net decrease of $0.000469 per kilowatt hour to the RES adjustor that was proposed in the July Filing. A Revised Renewable Energy Adjustor Rate Schedule is attached as Exhibit C.

V. REVISED SCHOOLS AND GOVERNMENT RATE SCHEDULE

In Decision No. 71871,[10] the Commission adopted a new optional time-of-use ("TOU") rate applicable to K-12 schools, which will provide daily and seasonal price signals to encourage load reductions during peak periods. In this docket, APS has revised the Schools and Government Rate Schedule (Exhibit D) to incorporate the changes necessary to allow the schedule to be used in conjunction with the new schools TOU rate schedules.

VI. UPDATES TO DISTRIBUTED ENERGY ADMINISTRATION PLAN

APS has made some modifications and clarifications to the DEAP that are designed to improve customer service and eliminate any issues that might limit customer participation or satisfaction. They include:

- A recent Internal Revenue Service ("IRS") private letter ruling regarding the computation of the 30 percent federal tax credit for installing solar power systems

[10] Issued August 31, 2010.

indicated REC incentive payments are taxable income to the recipient. APS is thus required to report REC incentive payments to customers on IRS Form 1099. The DEAP describes the process APS will use to issue IRS Form 1099 to customers who purchase their systems for the incentives they receive, effective October 1, 2010.

- To provide clarification regarding residential DE incentives, the DEAP specifies that Rapid Reservation requests will not be counted as part of the maximum 600 reservations that would be accepted in the first three funding cycles, but rather will be accrued in the fourth funding cycle where all other program balancing is designed to occur. (Other examples of program balancing include recognition of funds available from cancellations, and adjustments to funding cycle budgets based on actual capacity incented.)
- To insure that the customer's equipment meets the highest national safety and performance standards, APS is requiring new test standards for inverters, crystalline silicon, and thin-film solar modules.
- To increase the cost-efficiency of daylighting systems, daylighting projects can be exempted from submitting an energy savings and design report, as long as the offsetting savings software utilized for system design has been approved and validated by APS.
- Non-residential active open-loop solar water heating systems will not be eligible for incentives, unless they have a proven design or technology to limit system degradation.
- To facilitate the tracking of system installations, solar providers will be responsible for providing written notification to APS of mergers or changes to the name of the business and other relevant information.
- To more clearly delineate whether a project qualifies for an up-front incentive ("UFI") or a PBI, APS modified the UFI criteria for both residential and non-residential. Specifically, residential grid-tied PV UFIs cannot exceed 25 kilowatts,

and non-residential projects with a total incentive of less than or equal to $75,000 are only eligible for UFIs.

In addition, APS has continued to enhance customer awareness around the program requirement that equipment installed more than 180 days before the date of reservation approval is not eligible for incentives. This requirement has become increasingly important because there have been a number of customers choosing to install their PV system prior to receiving a reservation. APS has taken this measure in an effort to provide increased consumer protection, given that until a reservation is received, incentives are not confirmed. Further, APS believes this clarification helps limit budgetary commitments beyond those made within the approved incentive program budget.

VII. UPDATES TO JULY FILING EXHIBITS

To reflect the current status of renewable energy commitments, 2011 RES budget and budget forecasts through 2015, APS has made the following modifications to the exhibits that are attached to the Revised July Filing:

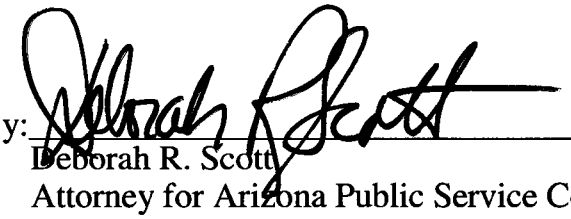
- Perrin Ranch Wind Project: APS has executed an agreement with an Arizona wind provider at less cost and for more capacity than the Company had projected in the July Filing. Modifications to the exhibits more accurately reflect the terms of the Perrin Ranch Wind PPA.
- Solana Concentrated Solar Plant: The developer obtained a federal loan guarantee commitment in July 2010. The exhibits reflect the updated commercial operation date to December 2013.
- Modification to the 15-year PBI contract offering for non-residential solar space cooling technologies that is based on stakeholder input to better align technology, finance and development needs for this unique market segment. (This change will also apply to the Schools and Government Program, which has been consolidated into this docket.)

VIII. CONCLUSION

Based on the discussion above, APS requests the Commission, in addition to the granting the specific approvals requested in the Company's July Filing, determine that:

1. The interconnection study process and fees described in the APS Supplemental Filing are approved;
2. APS's Revised 2011 Implementation Plan is approved;
3. APS's Revised 2011 Distributed Energy Administration Plan is approved;
4. APS's Revised Renewable Energy Standard Adjust Rate Schedule is approved; and
5. APS's Revised Schools and Government Solar Program Rate Rider is approved.

RESPECTFULLY SUBMITTED this 13th day of October, 2010.

By: 
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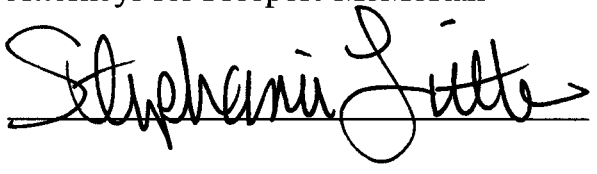

EXHIBIT A

EXHIBIT A

Arizona Public Service Company

Arizona Public Service
Renewable Energy Standard
Implementation Plan
2011 to 2015

REVISED
October 13, 2010

TABLE OF CONTENTS

ATTACHED EXHIBITS

Exhibit 1A	APS 2011 RES Implementation Plan Overview
Exhibit 1B	APS 2011 – 2015 RES Program Summary
Exhibit 1C	Energy Contributions to RES by Resource Group
Exhibit 1D(a)	Residential Customer Sited Distributed Energy
Exhibit 1D(b)	Non-Residential Customer Sited Distributed Energy
Exhibit 2A	APS 2011 – 2015 RES Budget Summary
Exhibit 2B	Revised 2011 RES Implementation Plan Budget Changes
Exhibit 3A	APS Existing and Targeted Generation (MWh)
Exhibit 3B	APS Existing and Targeted Generation Capacity (MW)
Exhibit 3C	APS Renewable Existing and Targeted Generation RES Costs (Dollars)
Exhibit 3D	APS Renewable Existing and Targeted Generation RES Costs (Dollars per MWh)
Exhibit 3E	AZ Sun Program Sample Revenue Requirements and O/M Costs
Exhibit 4A	APS Customer Sited Distributed Energy Incentive Programs Costs
Exhibit 4A(i)	Revised 2011 Renewable Energy Incentive Program Budget Changes
Exhibit 4B	APS Customer Sited Distributed Energy Programs (MWh)
Exhibit 4C	PBI Commitment
Exhibit 4C(i)	PBI New Contract Expansion
Exhibit 4D	Flagstaff Community Power Budget

I. EXECUTIVE SUMMARY

Arizona Public Service Company ("APS" or "Company") has prepared this Implementation Plan ("Plan") for the five-year period of 2011 to 2015 in compliance with the Arizona Renewable Energy Standard ("RES"),[1] which requires the filing of an annual plan describing how utilities intend to comply with the rule requirements for the next five years. This Plan describes the renewable energy resources that will be added over the next five years to achieve APS's annual RES targets and rate settlement commitments, the estimated customer funding and surcharge amounts (RES adjustor) required to acquire those resources, and a budget that allocates funding for specific projects and programs. The current RES requirement is three (3) percent of total retail sales in 2011, and the rules prescribe that 25 percent of that requirement is to come from distributed energy ("DE") solutions.

Additionally, in the Company's most recent rate case (the "Settlement Agreement"),[2] which was approved in December 2009 by the Arizona Corporation Commission ("ACC" or the "Commission"), provisions were adopted that exceeded the requirements of the RES. The Settlement Agreement required, among other provisions, that "APS shall make its best efforts to acquire new renewable energy resources with annual generation or savings of 1,700,000 MWh to be in-service by December 31, 2015…",[3] and further states that "these new resources shall be in addition to existing resources or commitments as of the end of 2008…".[4] Therefore, APS expects to approximately double its RES requirement of 5 percent of its retail sales in 2015 generated by renewable energy, and will thereby exceed its Renewable Generation and DE targets for both residential and non-residential programs in 2011 and throughout the five year planning period. The Company's Plan is also consistent with APS's planning goals and resource acquisition plans described in the Company's Resource Plan Report ("RPR") filed with the Commission on January 29, 2009[5].

This document revises the Implementation Plan originally filed by APS on July 1, 2010 (the "July Filing") and includes provisions incorporated in conformance with orders described by Decision No. 71913[6]. This amendment also includes revisions to select strategies and programs based upon developing market conditions.

As part of this plan, APS is updating information regarding current RES funding, and proposed additions and modifications to the July Filing based on intervening circumstances and updated information. This includes a proposed process outline and fee structure for interconnection studies for wholesale generators seeking interconnection to the APS energy distribution system, a revised methodology for budgeting actual annual financial obligations associated with in-service scheduling of Production Based Incentives (PBIs), and updates to the Distributed Energy Administration Plan ("DEAP") and related schedules.

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[1] A.A.C. R14-2-1801, *et. seq.*
[2] Decision No. 71448 (December 30, 2009).
[3] Settlement Agreement, paragraph 15.1.
[4] *Id.*
[5] Docket No. E-01345A-09-0037.
[6] Docket No. E-01345A-09-0338.

The Company is filing its updated DEAP as a separate document. The DEAP describes the participation process for a wide range of customers, presents incentive levels, and discusses eligible technologies and system requirements, which together provide an overall program that APS believes will encourage continued customer participation. In this filing, APS has also made incremental enhancements to the DEAP approved as part of the Revised 2010 RES Implementation Plan ("2010 Plan").[7]

This Plan and the DEAP are built on the foundation of the Company's 2010 Plan. A few key elements reflected in this Plan are provided below:

- APS plans for the Commission-approved AZ Sun Program to yield up to 50 MW of new solar generation projects in the APS resource portfolio by 2012 as a result of the Company's efforts to speed the deployment of solar PV resources.
- Since the filing of the 2010 Plan in October 2009, customer participation in APS residential and non-residential DE programs has increased significantly, requiring APS to request Commission approval for interim modifications to incentive programs. This Plan describes new DE incentive levels, a predefined incentive reduction strategy, and annual funding allocation strategies to encourage continued program participation.
- In response to customer and Commission interest in Feed-in Tariffs ("FIT"), two new programs have been proposed to deploy renewable energy projects. First, "Powerful Communities," a Wholesale Distributed Energy FIT, targets PV facilities between 30kW and 200kW for customer segments that have not historically had a clear vehicle for participation in APS's DE program offerings. Second, the Small Generator Standard Offer will seek projects of all renewable resource technology types from 2MW to 15MW against a pre-determined and pre-approved multi-year budget. The program introduces mechanisms to streamline the procurement and interconnection of identified projects.
- In response to the Settlement Agreement, APS is expanding the Schools and Government Program to facilitate projects in low income or rural areas and is offering no-cost solar daylighting installations to districts or governmental entities that participate in the PV program. The proposed program modifications were filed in a separate docket in April 2010.[8]
- APS is maintaining an aggressive approach to marketing its DE programs through expanded education and outreach campaigns as well as TV, print, web, and other media initiatives. The development of high-visibility demonstration projects, the full execution of the Qualified Solar Installer ("QSI") program, and continued partnering with lending institutions are examples of efforts to expand customer awareness, participation, and understanding of DE programs.
- APS is proposing a program to encourage the construction of innovative renewable energy technologies and deployment strategies.

APS currently estimates the cost of its RES related projects and programs to be $92.5 million in 2011, increasing to an annual cost of $170.0 million by 2015. The proposed Plan is estimated to

[7] Decision No. 71459 (January 29, 2010).
[8] Docket No. E-01345A-10-0166.

cost a total of $658.0 million over the five-year Plan period. The peak annual cost in this five-year planning window is $170.0 million in 2015, primarily attributable to the first full year of commercial operation of the Solana Generating Facility in 2014.

RES funding is intended to cover the cost of utility scale renewable generation in excess of the cost of conventional resource alternatives, incentive payments for DE resources, marketing expenses, and program implementation and administration costs.[9] The costs for renewable generation proposed to be collected through the RES adjustor during 2011 are partly based on APS's existing contracts and APS's Small Generation Pilot Program. These contracts will enable APS to meet renewable generation and total RES energy and Settlement Agreement targets in 2011 and through the duration of the five-year planning period. The costs for DE incentives and the program budgets are based on incentives developed as part of both Commission and APS-hosted stakeholder workshops, preliminary results from APS's Small Generator and AZ Wind Request for Proposals ("RFPs"), and APS's experience and projections of market penetration for the various technologies available to consumers.

At this time, APS is requesting adjustor funding of $86.5 million for 2011 (the adjustor for 2010 is currently designed to collect approximately $80.7 million annually). The requested adjustor amount, along with the $6 million collected in base rates, would total the $92.5 million of funding to meet 2011 requirements.

[9] For renewable assets owned by APS, RES funding is intended to cover the revenue requirements associated with ownership until such time these renewable assets are included in base rates or another mechanism.

II. INTRODUCTION

A. Renewable Energy Requirements

The Arizona RES was established in August 2007, and requires APS to file an Implementation Plan each year for review and approval by the ACC.[10] The Plan must describe the procurement of renewable energy resources for the next five calendar years that will meet the requirements of the RES, identifying the considered technologies, the expected schedule for the resource incorporation on a year-by-year basis, and the kW and kWh expected to be added to the APS portfolio by the incorporation of those resources.[11] The RES provides that reasonable and prudent costs incurred to comply with the RES Rules are recoverable.[12] Further, the RES provides that implementation of the approved Plan by the utility shall serve to measure the utility's compliance with the RES.[13]

APS has prepared this Plan for the five year period 2011-2015 in compliance with the RES Rules. The RES requires that affected utilities satisfy an annual renewable energy requirement by providing a percentage of their electric retail sales from renewable resources. The required percentage for the current implementation period begins at three (3) percent in 2011 and increases to five (5) percent in 2015.[14] That minimum percentage increases to 15 percent of the utility's total retail sales by the year 2025.[15]

The RES rules define renewable resources as: 1) renewable generation ("RG") projects that are constructed solely to export energy production to the utility; and 2) distributed energy ("DE"), a renewable resource application installed at the customer premises and used to displace customer energy consumption.[16] As part of the RES, the energy generated or displaced by DE is applied towards the percentage of the utility's distributed renewable energy requirement.[17] For both RG and DE, kWh derived from renewable resources for purposes of compliance with the RES are tracked as Renewable Energy Credits ("REC"), where one kWh equals one REC.[18]

Additionally, in the Settlement Agreement provisions were adopted that exceeded the requirements of the RES. That agreement required, among other provisions, that "APS shall make its best efforts to acquire new renewable energy resources with annual generation or savings of 1,700,000 MWh to be in-service by December 31, 2015…".[19] It further states that "These new resources shall be in addition to existing resources or commitments as of the end of 2008…".[20] APS expects to double its RES requirement of 5 percent of its retail sales generated

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[10] A.A.C. R14-2-1813(A).
[11] *Id.*
[12] A.A.C. R14-2-1808.
[13] A.A.C. R14-2-1815(C).
[14] A.A.C. R14-2-1804(B).
[15] *Id.*
[16] A.A.C. R14-2-1802.
[17] A.A.C. R14-2-1805(B).
[18] "Renewable Energy Credit" means the unit created to track kWh derived from an Eligible Renewable Energy Resource or kWh equivalent of Conventional Energy Resources displaced by Distributed Renewable Energy Resources. A.A.C. R14-2-1801(N).
[19] Settlement Agreement, Paragraph 15.1.
[20] *Id.*

by renewable energy by 2015. APS anticipates exceeding compliance with the RES renewable energy requirement in each of the five years covered by this Plan. Attached as Exhibit 1A and Exhibit 1B are summaries of the APS targets, energy requirements, and program budget.

B. 2011 – 2015 Renewable Energy Standard Program Funding

APS's proposed Plan is estimated to cost a total of $658.0 million over the five-year Plan period. This Plan is anticipated to result in APS exceeding its DE target and the Company's overall RES requirements in each year. The cost for 2011 is estimated to be $92.5 million, increasing to $170.0 million in 2015. Of the $92.5 million forecasted for 2011, $21.2 million is forecasted for RG projects, $69.3 million is reserved for DE programs, and $2.0 million is applied to Research, Development, Commercialization and Integration ("RDC&I"). The increase in annual costs during this five year period is primarily driven by increasing energy targets, the expected start of commercial operation of the Solana Generating Facility, new utility-scale photovoltaic generation, and DE program expansion. In this Plan, APS requests recovery of the estimated 2011 costs of approximately $86.5 million through the RES adjustor, which is a $5.8 million increase over the $80.7 million currently collected on an annualized basis. The requested adjustor amount, along with the $6 million collected in base rates, would total the $92.5 million of funding needed to meet or exceed the requirement. In each succeeding year, as part of its Implementation Plan, APS will continue to request a reset of the adjustor to collect the estimated costs for the following calendar year. The budget summary can be found in Exhibits 2A and 2B.

This Plan makes reasonable assumptions concerning renewable energy resources, and builds on APS's continued experience with these programs. Future plans will continue to account for the realities APS encounters in adhering to the RES requirements.

The programs and RG and DE requirements referenced in this Plan are described in relationship to compliance with the RES requirements; however, the procurement strategies and budget assumptions are intended to allow APS to meet or exceed the RES requirements, as well as the elevated requirements set forth in the Settlement Agreement.

III. RENEWABLE GENERATION PROGRAM OVERVIEW

A. Renewable Generation Requirements

Renewable generation is represented by projects that export their energy production to the utility and use renewable energy resources such as wind, solar, geothermal, biomass and biogas to generate electricity. While these projects are typically large-scale renewable generation facilities, they can also be smaller in size and still used to serve utility load. Energy produced from those resources is delivered through the transmission and/or distribution systems and, ultimately, to the utility's customers.

The RES targets are energy based (kWh), with no capacity (kW) requirements. However, the Plan utilizes generation capacity assumptions to forecast compliance with the energy targets. When equating energy targets to planned capacity levels, it is important to recognize that the capacity factors for various RG technologies vary significantly.[21] Some technologies, such as geothermal and biomass, are very predictable and can produce at capacity factors of 80 to 90 percent, similar to conventional base load generation. Some renewable generation technologies, such as solar, are predictable, but have inherently low capacity factors of 15 to 30 percent, driven by the daily availability of solar radiation. The incorporation of storage technologies similar to those proposed as part of the Solana Generating Facility project has the potential to increase the capacity factor of Concentrating Solar Power ("CSP") projects to 40 percent annually. Other renewable generation technologies, such as wind, are less predictable on a real-time basis. However, wind will generally produce capacity factors in the range of 25 to 40 percent annually, depending on the characteristics of the wind resource in a given location.

The balance of the technologies employed is critical as the ultimate portfolio balance will dictate the additional capacity required to achieve the energy targets. Exhibit 3B provides the level of capacity for the specific blend of technologies assumed in this Plan for the coming five years. Targeted additions described in Exhibit 3B assume a technology mix of the various resources APS plans to acquire based on its current resource strategy. The actual resource mix procured in 2011 may vary slightly from the forecasted mix described in the Plan. The economics of a particular resource or technology will ultimately determine the extent to which any one technology is employed as part of the overall portfolio.

In 2009, APS exceeded its RG target by 26 percent[22] and plans to continue to go beyond its annual RES requirements and achieve the goals detailed in the Company's Settlement Agreement. APS has based its RG program budget and energy procurement on several assumptions, which are discussed below.

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[21] Capacity factor is a value used to express the average production level of a generating unit over a given period of time. Capacity factor is expressed as a percentage of the maximum possible production if the generating unit had operated at its maximum capacity rating for all hours during the period. For example, a generating facility which operates at an average of 60 percent of its maximum capacity over a measured period has a capacity factor of 60 percent for that period.

[22] In 2009, APS's RG requirement under the RES was 478,946 MWh. By year end, APS actually generated 604,414 MWh.

The energy required to meet the APS targets and the allocation established to support anticipated demand for the Green Choice Power rates[23] in each of the next five years is outlined in Exhibit 1B.

The Plan was designed with sufficient flexibility to provide the best opportunity to meet or exceed APS's renewable energy commitments in a cost effective manner. The Plan provides descriptions of the current projects under contract, as well as the expected resource additions over the next five years. The renewable resources contemplated under this Plan are consistent with APS's short and long-term planning goals and resource acquisition plans described in the Company's RPR, and as described in stakeholder workshops supporting an expected 2010 filing of the Company's Integrated Resource Plan.

APS believes a key component of its procurement strategy is the diversification within its RG portfolio to include a mix of both utility ownership and purchased power agreement ("PPA") projects. Acquisition of solar resources through utility ownership is consistent with the Company's resource plan and will play an important role in its ability to meet overall RES and Settlement Agreement requirements.

B. Existing and Targeted Renewable Generation Projects

1. *Existing Renewable Generation Projects*

In 2011, APS's Plan targets about 287 MW of RG, all of which is either already in-service or are contracted to be developed. APS has 59 MW of photovoltaic capacity from solar generation projects; including 6 MW of APS owned facilities,20 MW through a PPA from the 2009 Small Generation Pilot Program, and 33MW of the first two installments of AZ Sun all of which are planned for service in 2011 and 2012. Existing contracts for additional RG resources include 190 MW of wind generation, 10 MW of geothermal generation and 28 MW of biomass/biogas generation.

In 2008, APS executed a purchase power agreement ("PPA") to acquire approximately 60 percent of the renewable energy from a biomass power generation facility located in Snowflake, Arizona. Salt River Project ("SRP") purchased the other portion of the facility's power. In July 2010, SRP requested termination of its contract with Snowflake White Mountain Power LLC, and the biomass company filed for Chapter 11 reorganization.

The renewable energy from the Snowflake facility plays a significant role in APS's renewable compliance portfolio. To facilitate the continuing operation of the biomass plant, in September 2010, APS executed a one-year contract to purchase all of the plant's output. The additional energy, capacity, and above market costs derived from the

[23] Original Green Choice Power rate schedules GPS-1 and GPS-2 were approved by the Commission in Decision No. 69663 (June 28, 2007). Revisions to GPS-1 and GPS-2 and the new Green Power rate schedule GPS-3 were approved by the Commission on September 17, 2009 in Decision No. 71276. The Green Choice Power rates were created to allow customers to purchase a portion of their energy usage from renewable resources. These purchases are not applied towards the targets described by the RES.

purchase of the entire output of the biomass plant are reflected in Exhibits 3A, 3B, and 3C of the Revised 2011 Plan (respectively). The 10 MW of additional output from the Snowflake facility has been reflected in the summary of existing renewable generation projects noted in this section.

2. *Targeted Renewable Generation Projects*

The intent of this Plan is to develop and evaluate the renewable resources for procurement in both the near-term (2011-2013) and the longer-term (2014 and beyond) of this five-year Plan planning cycle.

In the first half of 2010, APS issued RFPs in three competitive solicitations: an Arizona Wind RFP, a PV RFP, and a Small Generation RFP which serves as the first solicitation of the Company's Small Generator Standard Offer, as further discussed in Section III.C.(3). These three competitive solicitations combined seek more than 477,000 MWh annually. In 2010, the Company has signed three contracts under its 2009 Small Generation Pilot Program for over 48,000 MWh annually. Projects resulting from these solicitations, in conjunction with APS's approved AZ Sun Program and the requirements set forth in the Settlement Agreement, add over 1,400,000 MWh to APS's RG portfolio by 2015. The specific approach to acquiring these resources is described in the following section.

C. Renewable Generation Procurement Plan

APS plans to support the near-term need for additional energy output primarily from three established generation procurement plans, as well as additional competitive solicitations as needed. The three generation procurement plans consist of: 1) the AZ Sun Program, 2) the Arizona Wind Project, and 3) the Small Generator Standard Offer. As a result of Decision No. 71502 (March 17, 2010), APS is required to procure at least 25 MW of solar generation from Independent Power Producers ("IPP"), which the Company plans to acquire through either the Small Generator Standard Offer or other competitive solicitations. Exhibit 1C demonstrates APS's RG procurement timeline.

1. *AZ Sun Program*

In Decision No. 71502, the Commission approved APS's request to develop 100 MW of utility-owned solar generation through the AZ Sun Program. This Decision authorized the Company to develop the first 50 MW and recover the revenue requirements associated with these installations through the RES adjustor until such time as it can either be incorporated into APS's base rates or recovered through an alternate mechanism. Further, the Commission ruled that revenue requirements for the remaining 50 MW will be recovered through a mechanism to be addressed in the Company's next rate case consistent with Section 15.7 of the Settlement Agreement.

- The AZ Sun Program received authorization for a capital investment of up to $500 million between 2011 and 2014 to develop 100 MW of solar generation capacity. This

investment is based on estimated solar PV capital cost of $5.00/watt. The cost of the actual systems deployed will be based on competitive procurement processes, and will most likely vary with the size of the system. APS intends to have 50 MW of AZ Sun PV systems installed and in-service by 2012.

Pursuant to the Settlement Agreement, the Company filed a Utility Scale Photovoltaic Plan in April of 2010.[24] One of the components of that Plan is the 2010 Photovoltaic ("PV") RFP, in which the qualifying project was required to have a construction initiation date no later than 18 months from the date of the Plan filing. To expedite deployment and to ensure a solar generation project will begin construction within the required 18 months, APS issued the 2010 PV RFP on January 27, 2010. On April 8, 2010 APS received over 120 proposals from over 50 entities. The proposed projects were located throughout the Southwest and ranged in size from 15 MW to 50 MW. APS received bids for both turnkey and PPA projects.

2. *Arizona Wind Project*

As a result of APS's Settlement Agreement, the Company issued an RFP for in-state wind generation on January 27, 2010. APS received 14 proposed projects from seven (7) entities by the close of the RFP in April 2010, all of which were for projects through PPAs. All of the projects proposed were located in northern Arizona and ranged in size from 20 MW to 100 MW. The Settlement Agreement further required APS to file for Commission approval of the selected project within 180 days of issuing the RFP. As a result of this process, APS submitted a separate filing for approval of the Perrin Ranch Wind Project, on July 26, 2010.[25]

3. *Small Generator Standard Offer*

The 2010 solicitation for small generation, issued April 27, 2010, served as the first in a series of solicitations that define the Company's Small Generator Standard Offer. The program is intended to assist developers in providing APS with renewable generation projects ranging from 2 MW to 15 MW. This smaller project scale is used to bring projects into commercial operation within expedient timeframes through the following mechanisms:

- Committing and receiving authorization for an annual budget for the term of the contract;
- Encouraging high proposition projects;
- Conducting regularly scheduled and repeated project solicitations;
- Offering a standard contract to all program participants; and
- Working to improve and streamline the interconnection review/design process.

[24] By letter dated April 29, 2010 in Docket No. E-01345A-08-0172.
[25] Docket No. E-01345A-10-0314,

The Small Generator Standard Offer will have an annual budget of $10 million dollars over the three-year full deployment period. This program builds on knowledge gained from the 2009 Small Generation Pilot in that it is limited by budget rather than by size. Given the robust interest in the 2009 Small Generation Pilot, the Company believes the competitive pricing design will result in the greatest amount of renewable energy development for the ratepayer at the least cost. Additionally, a pre-approved program budget will allow for an expedited transaction and financing process.

Eligible renewable facilities and their applicative criteria are described in the 2010 solicitation for Small Generation, and are similar to those included in the 2009 Small Generation Pilot. APS will seek to identify projects that, to the extent possible, balance low project costs with high value propositions (e.g., projects that may involve high value partnerships or facilitate local job creation).

The deployment schedule for associated technologies continues to apply as defined in the 2010 solicitation for Small Generation. Future project solicitations will seek to shorten the initial 24-month project development schedule as APS and project proponents gain additional experience in the program.

APS's experience with the 2009 Small Generation Pilot confirmed the strong interest from renewable resource developers in this market segment. Over 20 developers submitted 45 projects for APS consideration. Importantly, for each project actually submitted in response to an APS solicitation, a greater number of projects are investigated to determine viability before submittal. Those investigations routinely include siting and interconnection questions. For example, in this solicitation, even if only one of every two projects investigated were submitted for APS consideration, APS resources for interconnection and engineering services would still have been required to address each investigated project (a total of 90 projects), along with any supporting inquiries, in the short period before the project bid deadline. The cyclical nature of project development has presented challenges for managing processes and resources to support these renewable development initiatives.

Proposed Wholesale Distribution Interconnection Process Improvements

Commission Staff recommended that utilities can, with Commission approval, assess a tariff or fee for the processing of an interconnection application or for the review time necessary to evaluate the potential safety, reliability, and power quality impacts on the electric distribution system from the interconnection of renewable generation resources.[26] Based on the Commission Decision[27] on the subject of interconnecting distributed generation facilities, as well as feedback from stakeholders, APS proposes a process outline and a reasonable charge that would be used systematically to process wholesale distribution level interconnection applications, ensure the safe and reliable operation of

[26] Utilities Division Memorandum entitled Interconnection of Distributed Generation Facilities in the Generic Investigation of Distributed Generation, dated June 15, 2007 in Docket No. E-00000A-99-0431.
[27] Decision No. 69674 (June 28, 2007).

the electrical system, and improve the development process for these types of renewable energy projects state-wide.

Under APS's proposed process and fee schedule, wholesale renewable energy developers interconnecting at the distribution level would be able to request three different categories of study work to be completed by APS:

- **Non-FERC Feasibility Study** (analysis open to any potential developer),
- **Non-FERC System Impact Study** (analysis conducted by APS that may be requested by a developer to more thoroughly evaluate interconnection issues, including costs), or
- **Non-FERC Facilities Study** (required study conducted by APS for all projects interconnecting to the APS system to provide a comprehensive analysis of project-specific construction and interconnection issues and costs).

If the developer requests a Non-FERC Feasibility Study, APS will conduct a preliminary review of the potential impacts on the distribution system that will result from the proposed interconnection. This will include a review of the contribution from the proposed generator as well as potential overloading of the distribution system and circuit protection devices. Additionally, this study will provide initial details and ideas on the complexity and likely costs to interconnect and will require the developer to identify the proposed project site location. APS will assess a flat $5,000 fee for a Non-FERC Feasibility Study.

If the developer requests a Non-FERC System Impact Study, APS will conduct a full technical review of the project's impact on the APS distribution system, including power flow, APS system protective device coordination, system protection schemes and voltage drop. This study will inform both APS and the developer if any upgrades to APS's system are needed to build and interconnect the project as designed. APS will assess a $15,000 fee for a Non-FERC System Impact Study.[28]

All projects that plan to interconnect to the APS system will be required to have a Non-FERC Facilities Study completed by APS.[29] APS will conduct a comprehensive analysis of the actual construction needed to take place based on the outcome of the engineering study and delineate the detailed costs of construction and milestones. A Non-FERC Facilities Study will require a deposit of $55,000, with the study work billed at an hourly rate and trued up at the conclusion of the study[30].

[28] If APS has already completed a Non-FERC Feasibility Study for a developer, the charge for the Non-FERC System Impact Study would be $10,000.

[29] Non-FERC Feasibility Studies and Non-FERC System Impact Studies are not required but would be performed at the request of the developer. However, no project-specific interconnection information will be provided without a formal study and fee.

[30] APS currently charges $100 per hour for this type of engineering study work. If the developer had a Phase 1 study and/or a Phase 2 study, the $55,000 deposit would be reduced by those fees already paid.

APS believes that its proposed distribution-level interconnection process outline would identify potential issues with specific renewable projects at earlier stages in the development process. Ultimately, renewable project evaluation would be streamlined by incorporating these processes into APS's procurement efforts, including those proposed in the Small Generation Standard Offer program. All of the proposed fees are intended to cover the costs APS incurs to perform the tasks identified at each of the project development phases. Further, the more formalized process outline and associated fees are designed to help ensure that APS is providing the necessary resources in projects where the developers demonstrate commitment to project execution. All fees will be applied to the RES budget to offset resources necessary to provide these services. APS's proposed process outline seeks to support the identification of the most viable renewable energy projects.

D. Renewable Generation Financing Options

For purposes of resource and budget planning, the financing of costs for RG in 2011 through 2015 will be based on three procurement methods: 1) the Utility Ownership Model, 2) the PPA Model, and 3) the Small Generator Standard Offer.

The costs of RG projects through the utility ownership model are based on the revenue requirements associated with the installations owned by the Company. Under the AZ Sun program, APS is authorized to collect the revenue requirement associated with the installation of the first 50 MW through the RES adjustor until such time as it can be incorporated into base rates or an alternate mechanism. Revenue requirements associated with the second 50 MW will be recovered through a mechanism to be determined in the Company's next rate case.

The cost of renewable energy contracts includes two components: costs associated with comparable generation, which are collected consistent with the accounting rules related to APS's Power Supply Adjustor ("PSA"); and above-market costs of RG, those costs above the cost of comparable conventional generation.[31] For existing contracts, the percentage above APS's cost for comparable generation was established at the time the contract was signed and the percentage is applied to the total contract cost for the planning year. For targeted future contracts, such as those under the Small Generator Standard Offer, the price is estimated based on existing RG contracts, recent market experience, and general trends observed in RG project development. All renewable resource costs are described in terms of dollars per MWh above APS's comparable conventional generation.

APS believes it is in the best interest of customers and the Company to ensure that future suppliers of renewable resources compete for the right to supply renewable energy without predicted pricing assumptions or competitively confidential information. Therefore, APS has submitted a redacted version of that confidential information in Exhibit 3C and 3D and will provide Staff the competitively confidential information pursuant to an executed Protective Agreement. It should also be noted that the existing contracts referenced in Exhibits 3C and 3D

[31] A.A.C. R14-2-1801(K) defines Market Cost of Comparable Conventional Generation.

are long-term commitments that are either already in place or nearly finalized at the date of this Plan.

1. *Utility Ownership Model*

The Commission approved APS's request to recover the revenue requirements associated with the first 50 MW of RG installations owned by the Company, including depreciation, property taxes, income taxes, operating and maintenance expenses and financing costs using the then currently authorized cost of capital, through the RES adjustor.[32] The mechanism to recover costs associated with the remaining 50 MW will be addressed in the Company's next rate case.

Based on requirements of the Settlement Agreement, the Company anticipates it will file two rate case applications to adjust its base rates during this five-year plan period, one to be adjudicated by July 2012 and a second by July 2014. Following each potential rate case adjudication, the Company plans to remove the revenue requirement related to all renewable energy utility owned projects from the RES adjustor mechanism and capture them in APS base rates. Only projects that are installed and operating would receive this treatment as a result of each respective rate case.

2. *Power Purchase Agreements*

APS issued competitive solicitations between 2008 and 2010 seeking additional renewable energy, including distributed resources, with commercial operation dates ranging from 2011 to 2015. APS continues to utilize PPAs to assist the Company in diversifying its portfolio. The competitive procurement processes will continue to consist of, but not be limited to, the issuance of RFPs, negotiated bilateral supply contracts, and other strategies for obtaining long-term renewable resources. Implementing an effective competitive procurement process will ensure a fair and unbiased procedure that will efficiently incorporate a full range of renewable resource alternatives from the marketplace. APS expects to continue engaging the market and seeking cost effective projects over the near term.

In the evaluation of bids submitted during the competitive procurement process, analysis of proposals will include an evaluation of energy production, capacity value, deliverability, technical characteristics, operational performance, reliability, efficiency, credit, financeability, and respondent experience. The procurement and project selection procedure employed by APS has been documented and certified by an independent auditor as required by the RES.[33]

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[32] Decision No. 71502 (March 17, 2010).

[33] A.A.C. R14-2-1812(B)(6) requires utility compliance reports to include "A description of the procedures for choosing Eligible Renewable Energy Resources and a certification from an independent auditor that those procedures are fair and unbiased and have been appropriately applied." Certification letters were filed as part of the RES Annual Compliance Report filed in Docket No. E-01345A-95-0491, on February 29, 2008, and in Docket No. E-01345A-07-0468 on April 1, 2009.

3. *Small Generator Standard Offer*

The Small Generator Standard Offer seeks projects ranging from 2 to 15 MW and is open to all renewable technologies. APS's first solicitation for projects under this program was issued on April 27, 2010. Subsequent solicitations under this program will be issued in the first quarters of 2011 and 2012. This first solicitation required proposed projects to be in-service no later than the end of 2012 for solar and wind technologies, and by the end of 2013 for all other resources. The solicitation timeline indicated that APS plans to shortlist the proposed projects by August 26, 2010, select final projects by October 14, 2010, and finalize a contract(s) by the end of the first quarter of 2011. Based on lessons learned from the Company's 2009 Small Generation Pilot, APS has refined its procurement process and has created a standard contract. APS anticipates this Small Generator Standard Offer will result in a final contract(s) within eight months of the issuance of the solicitation.

Exhibit 3A defines the anticipated energy production from the Small Generator Standard Offer while Exhibit 3B defines the program budget. At this time, the Company is committing to spend $10 million annually over the three year program to ultimately achieve approximately 200,000 MWh annually.

APS values a diversified generation portfolio and continues to encourage all RES eligible technologies to participate in current and future solicitations. APS expects a majority of the responses to this solicitation to come from photovoltaic facilities, but the Company may choose to allocate a portion of the overall budget to non-solar technologies and/or emerging, commercially-viable technology innovations depending on the substance of the proposals.

E. Renewable Generation Challenges and Risks

In developing this Plan, APS evaluated renewable resources available for procurement in the near term, as well as those anticipated to become available over the longer term of the five-year period covered by this Plan and beyond.

Assuming that all existing facilities remain operational at their expected level of production and planned facilities develop on schedule and according to their specifications, APS will meet or exceed its RG objectives and its total RES energy targets for 2011. The Company believes that its diversified procurement strategy is a significant factor in ensuring APS acquires the most efficient and cost effective RG resources for its customers. Rather than procuring in fixed capacity increments to achieve its renewable energy target, APS has learned through multiple solicitations that allowing the market to guide the Company's procurement strategy is the most cost-effective approach.

During 2009 and the first half of 2010, APS issued multiple competitive solicitations seeking to procure a wide range of RG resources. Responses to these solicitations provided APS with current pricing trends and served as a market indicator as to the appropriate timing to advance specific projects. Based on this strategy, some solicitations resulted in more proposed capacity

than what was requested. Bidders submitted lower than anticipated installation and operating costs, possibly reflecting a trend in the industry towards a gradual price decrease in the solar development costs and the broadly maturing Arizona renewable energy markets.

The Company believes that issuing regular solicitations allows for the continued monitoring of market trends and the opportunity to gauge prices in order to determine an optimal time to procure renewable generation when considering the RES targets, the Settlement Agreement objectives, and APS's resource needs. APS will continue this market-driven procurement strategy, as it allows the Company to provide the most cost-effective generation, ultimately benefiting ratepayers in the long term.

F. Renewable Generation Implementation and Administration

The RG program requires subject-matter experts to identify those aspects of RG procurement, engineering, and market analysis that are unique from those same areas in conventional energy operation, and to coordinate with the impacted operational areas of APS to seamlessly integrate renewable resources into APS's standard business practices. The RG administrative team includes personnel with the expertise necessary to manage the program. Program management includes establishing policies and procedures, procuring renewable generation, handling contract administration and construction management, managing benchmarking and resource integration studies, and performing program monitoring and compliance reporting.

As mentioned above, APS plans to add over 1,400,000 MWh by 2015 through the development of projects resulting from the AZ Sun Program, projects to achieve compliance with the Company's Settlement Agreement (online by 2015), the Arizona Wind RFP (2012), a second wind RFP (2015), a PV RFP (2012 - 2013) and the proposed Small Generator Standard Offer (2012 - 2014), as well as three projects under its 2009 Small Generation Pilot Program (2010 - 2011). Facilitation of these solicitations and implementation of these projects require an increase in implementation funding for RG projects throughout the term of this Plan.

There are many APS personnel who support the program but are not part of the administrative team. Those employees are not included in the program costs; they are considered "non-incremental" because they are necessary to support the general operations of the Company and have other responsibilities that are not directly related to the RG program. This support includes, but is not limited to, regulation and pricing, accounting, legal, contract administration, contract settlement, transmission planning, power and gas marketing, and resource planning. As the RG programs expand and diversify, implementation and administrative costs will increase as appropriate.

IV. CUSTOMER SITED ENERGY PROGRAMS

A. Renewable Energy Standard Distributed Energy Requirements and Plan Overview

1. *Requirements and Program History*

The RES requires that APS satisfy a percentage of the annual renewable energy requirement through the addition of DE resources at an increasing interval of deployment. The required DE percentage in 2011 is 25 percent of the total RES requirement, increasing to 30 percent by 2012, and remaining at that threshold through 2025.[34]

Since approval of APS's first RES Implementation Plan in 2008, the Company has gained considerable experience with and understanding of the opportunities and challenges associated with the deployment of DE at the scale required under the RES. Beginning in 2009, the Company has exceeded compliance in its non-residential DE program and has experienced an unprecedented increase in customer participation within the residential DE program, with residential program participation through October 2010 exceeding the Company's 2010 overall target. APS believes this increase in demand will continue through the near-term. Through this Plan, APS continues to support the non-residential and residential markets beyond DE targets described in the RES at a lower cost than that projected in APS's 2010 Plan. The proposed DE incentive budget and the incentive budget allocation in the 2011 Plan are intended to exceed the residential and non-residential DE target for the full five years of this planning period.

2. *2011-2015 Program Objectives and Initiatives*

APS's Plan forecasts the amount of customer installed generation or energy savings (measured in MWhs) needed to meet the Company's overall DE RES requirement (in 2011, the estimated residential DE RES requirement is 106,633 MWh). APS then calculates the level of incentive dollars required to support that amount of generation or energy savings. Due to the modification in the structure of the residential incentive levels, APS has requested a reduction in the residential funding for 2011 from what was originally forecasted as part of the 2010 Plan filed in October 2009. In order to achieve the residential DE target and accommodate the variables associated with deploying customer-sited DE resources, APS is requesting an incentive budget sufficient to exceed compliance with the RES residential and non-residential DE targets in each year of this Plan.

The assumptions used to build the DE program budget are based on incentives developed as part of the following mechanisms:

[34] A.A.C. R14-2-1805(B).

- Commission Staff's Uniform Credit Purchase Program ("UCPP") working group and APS stakeholder work sessions supporting the development of this Plan;
- Previous year program installations and reservations under APS's Renewable Energy Incentive program ("REIP");
- Project sales and development time frames;
- Variations in the levels of technology maturity; and
- Availability of equipment for installation.

In an effort to meet the residential DE targets with the lowest program cost, the Company has modified its residential incentive program to respond to fluid market conditions, including reductions in module and installed costs. For example, APS observed residential installation costs in early 2009 at approximately $7.15 per watt. At the beginning of 2010, installation costs had dropped below $6.00 per watt and in the weeks following APS's incentive reduction in April 2010,[35] a high volume of applications offered installed costs below $5.00 per watt. Maintaining high levels of customer participation with concurrent reductions in installed costs and incentives demonstrates the need for an incentive design that is guided by market adoption.

Sections 15.5 and 15.6 of the Settlement Agreement required APS to create a new program for public and charter elementary schools and secondary schools, as well as governmental institutions, in the Company's service territory. These tax-exempt customer segments have historically not been cost-competitive in prior incentive funding processes. APS has revised its Schools and Government Program to allow for the easy adoption of solar technologies, with options that would eliminate up-front costs for schools and substantially reduce or eliminate up-front costs for governmental institutions. In April 2010, the Company filed for approval of its Schools and Government Program, and has proposed that this program be approved in conjunction with the Company's 2011 Plan.[36] APS proposes to incorporate its Schools and Government Program into its 2011 Plan budget, and intends that the incentive levels described in this Plan will supersede those that were filed in the Company's previous application. Upon Commission approval of the Schools and Government Program, APS will make any necessary conforming changes within the DEAP.

The 2011 cost for new and existing incentive commitments is estimated to be approximately $56.8 million. This amount escalates to approximately $71.7 million in 2012. It is expected that 2012 will be the peak cost year in this five-year planning window, as 2012 is the year the DE requirement reaches its maximum relative to the total RES requirement. After 2012, the increases to the requirement are based on the growth of the overall RES requirement and retail sales increases.

[35] Decision No. 71686 (April 30, 2010).
[36] Docket No. E-01345A-10-0166.

B. Incentive Budgets

The proposed DE incentive budget for the five-year planning window is described in Exhibit 4A and is designed to result in sufficient residential and non-residential DE installations to incrementally exceed the annual RES targets.[37] Annual changes in program budget are designed to accommodate an increase in the DE energy target, both as an increasing fraction of the total RES requirement and as the requirement itself increases based on total APS retail sales.

1. *Up-Front Incentives*

Program Overview

Interest in APS's DE programs has increased over the past year, with the most noticeable gain occurring in the residential sector beginning in the fourth quarter of 2009 and continuing through 2010. APS recognizes that residential customer demand might exceed available funding, as evidenced by 2010 program participation. Therefore, the Company has proposed increasing the residential DE funding beyond that which is necessary to achieve compliance.

At the incentive levels approved as part of the 2010 Plan, residential demand through the first half of 2010 exceeded the incentive budget. APS believes this is strong evidence that incentive levels were no longer aligned with the cost of PV resources. In an effort to preserve funding for residential installations beyond the first half of 2010, APS requested and received approval from the Commission to reduce the residential grid-tied PV incentive from $3.00 per watt to $2.15 per watt for the first three megawatts of reserved capacity, followed by a $0.20 reduction to $1.95 per watt for all subsequent 2010 reservations. Additionally, the Commission approved a reduction from $0.75 to $0.50 per first year kWh savings for residential solar water heaters.[38]

Following the April incentive reduction, APS's queue of residential DE applications continued to grow. Funding Cycle One (March 31, 2010 - July 1, 2010) and Funding Cycle Two (July 2, 2010 - October 1, 2010) available budgets were quickly exhausted and the list of applications set to be reserved in fourth quarter of 2010 increased. APS recognized the strong possibility that by the time the Company's 2011-2015 Plan was approved, the majority of the 2011 residential DE budget could be fully allocated based on the Commission's April decision.[39] To address this concern, APS filed an application seeking clarification on specific DE provisions detailed in Decision No. 71686. As a result of the Company's August application, Commission Decision No. 71913[40] ordered APS to only reserve up to 600 residential grid-tied PV applications against 2011 budget in the fourth quarter of 2010 at $1.95 per watt. Further, consistent with Decision No. 71686, these reservations would not be paid until after January 1, 2011.

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[37] A.A.C. R14-2-1805(D).
[38] Decision No. 71686 (April 30, 2010)
[39] Decision No. 71686 (April 30, 2010)
[40] Issued September 28, 2010.

For 2011, planning models, implementation strategies, and budgeting for the DE programs included in this Plan were all designed with specific consideration for the insight from stakeholder input from APS's continued dialogue with key industry stakeholders and the UCPP working group. This included a series of Implementation Plan development work sessions on key issues, such as the residential incentive program redesign, removal of the 50 percent incentive cap, and the introduction of an incentive budget allocation for non-PV technologies.

2011-2015 Program Modifications

As a result of these discussions, APS proposes the residential PV grid-tied incentive begin at $1.75 with market-driven triggers for future incentive decreases.[41] APS believes the incentive thresholds and proposed method for ongoing incentive reductions are appropriate to meet the residential RES target and support the increased levels of customer participation in the program.

The Company's proposed residential incentive reductions are modeled after modifications made to the Company's 2010 program and include predictable incentive declines based on installed capacity and managed by volume of reservations. The proposed incentive step-downs occur after the reservation of 1,200[42] grid-tied PV applications ("tranche"). APS forecasts each tranche to result in approximately 8 MW of capacity.

Following the reservation of the first tranche at $1.75 per watt, the Company proposes the residential grid-tied PV incentive decrease by $0.15 per watt to $1.60 per watt, reaching $1.45 per watt by the end of 2011. The first three tranches will have step downs of $0.15 per watt, followed by three tranches with $0.10 per watt step-downs in future years. Beyond those six tranches, each additional tranche will step-down $0.05 per watt, as described in the table below. The incentive matrices are incorporated as part of the DEAP (Exhibit B). Also, as a result of the dynamic nature of the declining incentive and the selection of an appropriate fixed incentive level for solar water heaters ("SWH"), the Company no longer feels it is necessary to cap customer incentive payments at 50 percent of the total system cost, or require a minimum of 15 percent customer contribution for SWH, and thereby proposes the elimination of these caps.

[41] This incentive level would begin with the first funding cycle of 2011 (in 2010). See Section 6.2 of the DEAP for Funding Cycle details.
[42] 1,200 applications exclude those reserved through the "rapid reservation" incentive offering.

Residential PV Incentives 2011 - 2015

Tranche	1	2	3	4	5	6	7	8	9
Incentive Level	$1.75	$1.60	$1.45	$1.30	$1.20	$1.10	$1.00	$0.95	$0.90
Anticipated Cumulative Capacity	8 MW	16 MW	24 MW	32 MW	40 MW	48 MW	56 MW	64 MW	72 MW
Anticipated Program Year	2011	2011	2011/2012	2012	2012/2013	2013	2014	2014/2015	2015

All other residential DE technologies will receive the previously planned incentive reduction in 2011. Those planned reductions were designed by the UCPP working group and modified based on program performance in an attempt to reflect the anticipation that DE technologies will decline in cost as market penetration and product availability increase. The proposed 2011 UFI budget for residential DE systems is $34 million.

Further, within each available funding cycle, residential customers will be eligible for a "rapid reservation." "Rapid reservation" incentive requests will not count against the 600 reservation cap per funding cycle. Throughout a funding cycle, APS will confirm all grid-tied PV applications that request $1.00 per watt, effectively foregoing placement in the reservation queue. The Company believes a rapid reservation offering is an important indicator of market pricing, and demonstrates the market's ability to handle future incentive reductions. The Company recognizes that the $1.00 per watt incentive level might need to be re-evaluated and decreased accordingly in future years of the program.

Allowing the market to dictate the timing of incentive level reductions is one component of creating a residential DE program that can sustain year-long participation. In addition, the Company has learned through its non-residential program that the creation of funding cycles is also useful in eliminating peaks and valleys in funding requests, thereby creating a stable incentive market. For this reason, APS will introduce quarterly funding cycles into the residential DE program for grid-tied PV projects. The Funding Cycles are defined in Exhibit B. For the purposes of this Plan, the first Funding Cycle of each Plan year occurs during the final quarter of the preceding calendar year (e.g., Funding Cycle One of 2011 begins in October 2010).

Residential UFIs are available for PV systems up to 25 kWdc. Residential non-PV technologies are eligible for UFIs up to a total of $50,000 for each installation. Larger residential DE systems may be installed by the customer consistent with other program limitations, but will not be eligible for incentives for the fraction above the UFI incentive limit.

Continuing the Company's 2010 non-residential UFI strategy, the Company proposes an annual funding of $2 million, equally divided into bi-monthly funding cycles and awarded to the projects with the lowest score as determined by the ranking calculator

described in the DEAP. Non-residential UFIs were developed for technologies where the average project size results in a total incentive less than or equal to $75,000.

2. *Production Based Incentives*

As part of this Plan, APS continues its expansion of its non-residential DE program around an annually increasing lifetime PBI authorization. Specifically, in each year of the Plan, APS proposes new lifetime PBI commitments of $100 million for non-residential DE projects. This reflects the approach approved by the Commission in APS's 2010 Plan.[43] APS anticipates that the increased funding under the lifetime PBI commitment will result in a growing number of increasingly cost-effective customer DE installations.

Projects resulting from the DE RFP are substantially the same as commitments under the PBI program and, as a result, the Company includes those commitments in its calculation of lifetime PBI authorization. In 2011, the lifetime PBI authorization necessary to implement the non-residential PBI projects as described in this Plan is $670 million. Details of the requested PBI lifetime commitment authorization for all of the years described in this Plan are included in Exhibit 4C.

With specific experience from APS's REIP and based upon dialogue with customers and other stakeholders,[44] the expanded non-residential program will allocate the annual $100 million increase in the lifetime PBI to two areas: $73 million for large and medium projects and $27 million for the Schools and Government Program as defined in Section IV.F of this Plan. Of the $73 million available for large and medium projects, $18 million will be split equally among the funding cycles for medium projects and the remaining $55 million will be split equally among the large project funding cycles.

The increased lifetime PBI commitment authorization is accompanied by a forecast of the annual funding requirement necessary to meet incentive payments resulting from the energy produced in each budget year. Based on the Company's improved understanding of when commercial projects become operational relative to the close of each nomination period, APS has modified its methodology for projecting when it will be required to make payments on Production Based Incentives ("PBIs") commitments. Currently, APS uses a mid-year convention that anticipates that half of the PBI projects are online by mid-year. However, the Company has come to realize that the full development cycle for PBI projects demands a longer timeline, and it is generally not feasible for large non-residential projects to be completed in a three-month period. Within the PBI program, the large project category represents the greatest total financial commitment in any given

[43] Decision No. 71459 (January 29, 2010).

[44] On June 9, 2009, APS held a 2010 Renewable Energy Standard Implementation Plan stakeholder meeting focused on the status of the non-residential DE program. APS informed stakeholders that participation in the non-residential program had exceeded expectations, which presented challenges for the Company in the acceptance of PBI reservations under the existing Commission approved lifetime PBI commitment authorization of $77 million. Options to reduce costs without diluting the amount of distributed renewable energy generated were discussed with stakeholders. APS is using stakeholder input to further refine its DE program.

year. The new methodology assumes that new commitments will be counted within six to nine months following the close of each nomination period for large projects, and six months following the close for each nomination period for medium projects. As a result, the portion of the PBI budget for new commitments has been reduced by $9.5 million. The annual funding required for DE Incentives is included in Exhibit 4A. Exhibit 4A(i) presents the budget differential between the Company's Implementation Plan filing in July 2010 and this revised filing. In addition, the detailed interaction between annual funding, payment intervals, and the lifetime PBI commitment authorization is included in Exhibits 4C and 4C(i).

Within the last year, APS's non-residential DE program has experienced a significant increase in the volume of application requests for incentive funding for various DE technologies. The program continues to benefit from a competitive process to reduce the cost of incentives, which has contributed to driving market prices down. This growth in participation has prompted the Company to collaborate with stakeholders to revise the program contract and incentive offerings, and develop enhanced programs for technologies and customers that have historically limited participation in the programs.

Elimination of the 10/20 PBI

Based on Commission direction, APS has collaborated with stakeholders to evaluate the market need for a 10-year incentive payment with a 20-year renewable energy Credit Purchase Agreement ("10/20"). Through these discussions, it was determined that the market is best served by three other PBI agreements and that the 10/20 offering is no longer necessary. Accordingly, APS is requesting to eliminate the 10/20 PBI offering. The 10/20 offering was initially designed to encourage program participation within market sectors where program adoption was slow, and was desirable to DE developers because it provided a quicker, though not always stronger, return on investment. The 10/20 offering has fulfilled its function and program participation has increased. Because the initial function of the 10/20 offering has been satisfied, the risks associated with "mis-matched" terms and production defaults are no longer warranted as part of APS's incentive program.

In response to stakeholder feedback, the Company is proposing to offer a new 15 year agreement for non-residential SWH, solar space heating and solar space cooling. Beginning in 2011, this unique 15 year offer will have many of the same benefits of the 10/20 agreement, which was identified to have important elements for solar thermal technologies, while eliminating risks associated with mis-matched terms. Through discussions with stakeholders, the Company believes the modified 15 year offering will continue to facilitate contracts while reducing ratepayer risk. Details regarding this incentive structure can be found in Exhibit 1 of the DEAP.

Facility Category and Program Cap Modifications

In the Company's 2010 program, APS observed a greater percentage of medium sized projects receiving funding than large sized projects received. In an effort to more equally

allocate funding, the Company has proposed increasing the medium project category to include any electricity producing project whose inverter(s) or generator(s) is rated 200 kWac or less. By increasing the inverter and generator ratings to 200 kWac, APS expects to shift projects from the large category into the medium category and provide for more continuity across project sizes and funding intervals. All eligible projects will be required to conform to the provisions of the APS DEAP. A limited number of modifications have been made to accommodate the goal of increasing competition among Large and Medium project incentive funding, and thereby reduce incentive costs.

Additionally, based on feedback provided by stakeholders at work sessions conducted by APS in advance of the filing of this Plan, the Company proposes the elimination of the 60 percent cap on incentives as it is no longer a necessary tool to limit the amount of funds one project may collect. The cap originally served as a tool to allow for broader disbursement of funds and was aligned with project economics. However, the competitive nature of APS's current program continues to drive down the cost of incentives at a rapid pace, and the 60 percent cap no longer clearly distinguishes project economics.

3. *Budget Assumptions and Flexibility*

In developing anticipated program outcomes, APS made a number of informed decisions about technologies and customer preferences. These decisions included the anticipated number of projects by technology and the anticipated energy contribution from each DE project. Energy contribution was described by assumptions about average project size and average project production. These detailed assumptions are required for purposes of budget and planning; they are not intended to reflect allocations, funding authorization, or preference for any one technology.

In the event that funds collected for use in the DE incentive program are not fully subscribed in a program year, those funds will be applied to the next program year. To continue to adapt to customer demand and market changes, APS will continue to implement the incentive budget flexibility granted in Decision No. 70313 (April 28, 2008). In that Decision, APS was granted the ability to reallocate up to 20 percent of the incentive budget to meet customer demand.

C. Residential Customer Program Enhancements

As part of this plan, APS will further develop and expand three key components of its residential DE program to better meet market needs and assist in sustaining year-long participation in a predictable manner. First, APS will create an incentive funding allocation within the residential DE program for all eligible residential technologies, excluding grid-tied PV. Second, APS will revise the APS Energy Star plus Solar Homes requirements and benefits to better meet the unique needs of the home builder market segment while capitalizing on the market growth of new home construction. Finally, APS will introduce a solar water heating financing solution through the APS Home Performance with Energy Star program.

1. *Non-Photovoltaic Funding Allocation*

As required by the Commission during the incentive redesign in 2010, APS is introducing an allocation, or "carve-out", in the residential budget for all eligible DE technologies that are not grid-tied PV. APS will set-aside $6 million of the residential incentive budget to be used exclusively for all other eligible DE technologies and incentives will be distributed on a first-come, first-reserved basis. These DE technologies will not be subject to funding cycles. This carve-out is designed to facilitate diversity in renewable energy adoption. The remaining $28 million will be allocated for residential grid-tied PV projects and will be awarded based on the funding cycles previously described in this document.

2. *Energy Star plus Solar Homes Program*

Parallel to retrofit market growth, APS is experiencing increased DE program participation within the production and custom homebuilder market in the APS Energy Star plus Solar Homes program. Aggressive marketing efforts coupled with strong marketing incentives enabled this program to gain momentum even within Arizona's struggling new home market. The first year of the program attracted six builders, including two of the top ten builders in the nation, to incorporate solar technologies on at least fifty percent of the homes in their new communities within APS's service territory.

During the first year of the Energy Star plus Solar Homes Program, APS gained insight into the nuances of incorporating solar in new construction for custom and production home builders. Insights included incentive amount predictability over the developments construction timeframe, extended incentive reservation periods, and the marketability of "solar ready." These nuances prompted the proposed revisions to the APS Energy Star plus Solar Homes program in an effort to better meet the specific and unique procurement needs of the Energy Star home builder market. These revisions include extended reservation periods, annual incentive reductions unique to home builders, and additional marketing support for commitments beyond the baseline Energy Star plus Solar Homes program requirements.

The proposed enhancements to the Energy Star plus Solar Homes Program will provide financial incentives and longer reservation periods to encourage the installation of eligible renewable energy systems on new residential construction. The incentive levels, which are outlined in the table below, will be stepped-down annually and builder reservations will remain active for twelve months before expiration. The annual incentive step-down is an effort to better provide home builders with predictability in incentive amounts and to maintain general alignment with broader incentive declines seen throughout APS's programs.

Energy Star plus Solar Homes
PV Incentives

Program Year	2011	2012	2013	2014	2015
PV Incentive Level	$1.95/watt	$1.45/watt	$1.20/watt	$1.05/watt	$0.95/watt

In addition, APS will offer three tiers of builder incentives in the APS Energy Star plus Solar Homes program:

1. Energy Star builders committing up to 25 percent of their annual home closings within a participating subdivision are eligible for the previously mentioned builder PV incentive levels and twelve month reservation periods.
2. Energy Star builders committing up to 50 percent of their annual home closings within a participating subdivision are eligible for the previously mentioned builder PV incentive levels, twelve month reservation periods, and marketing incentives to assist with up to a 3 kW PV or SWH system for a model home.
3. Energy Star builders committing 50 percent or greater of their annual home closings within a participating subdivision are eligible for the previously mentioned builder PV incentive levels, twelve month reservation periods, marketing incentives to assist with up to a 3 kW PV or a SWH system for a model home, and a marketing incentive for each home installed with PV or SWH.

Additionally, APS encourages all builders to continue to build solar-ready communities, as defined in the 2010 APS Energy Star plus Solar Homes program, and builders will be compensated for all homes that are built solar-ready for PV or SWH.

The Energy Star plus Solar Homes program seeks to achieve over 500 DE installations, with over one megawatt of grid-tied PV installations. APS anticipates that over 2,700 solar-equipped and solar-ready homes will be built by 2013 as a result of the home builder program.

3. *Solar Water Heating Financing*

As a part of APS's Residential Energy Efficiency Financing ("REEF") program, an offering through APS's Home Performance with Energy Star program, residential customers will have access to solar water heating financing.[45] APS has partnered with National Bank of Arizona to offer customers financing for energy efficiency and solar water heating installations. APS believes this offer fills a void in the market, as there are few solar water heating financing solutions available due to the relatively low out-of-pocket costs associated with the procurement of solar water heating systems. APS

[45] The REEF program was filed on February 26, 2010 and is pending approval from the Commission in Docket No. E-01345A-08-0172.

anticipates over three hundred customers will have access to this program to secure financing for solar water heating as part of a whole house energy efficiency project.

D. Non-Residential Customer Program Enhancements

The success of APS's non-residential DE program in 2010, coupled with the success of the DE RFP, has resulted in commitments for non-residential DE resources beyond the RES targets. As part of this Plan, APS proposes a continued expansion of the non-residential DE program through the following components: 1) annual increases to the lifetime PBI authorization, 2) the continued deployment of projects resulting from the Company's DE RFP, and 3) partnering with the Department of Energy to assist with the deployment of solar on low-income, multi-family housing facilities. This commitment will require APS to match the Department of Energy's American Recovery and Reinvestment Act ("ARRA") funding with incentives in the amount of $1.2 million.

It is important to note that the Distributed Public Assistance Program ("DPAP") program approved in the Company's 2010 Plan has been renamed the Energy Assistance for Renewable Neighborhoods ("EARN") Program.

1. *Distributed Energy Request for Proposal*

APS executed two contracts and one agreement in early 2010 as a result of the Company's DE RFP for approximately 150,000 MWh annually. This total represents a little more than one-quarter of APS's non-residential DE requirement in 2015. Of the approved $250 million lifetime commitment budgeted for the DE RFP, the signed contracts resulted in a total of $225 million lifetime commitment.

In aggregate, when compared to the current cost of the non-residential DE program, the results of the DE RFP are projected to reduce program costs for RECs by approximately 50 percent.

2. *Department of Energy Partnership*

On May 12, 2009, the Arizona Department of Commerce Energy Office filed an ARRA State Energy Program application to the Department of Energy ("DOE"). The State Energy Office plan requested more than $55 million to fund six projects, including $10 million for Arizona's utilities for DE Leadership Projects. The DOE notified the State Energy Office that their projects had been funded on June 23, 2009. APS's portion of the Utility DE Leadership Project is $3.68 million.

With this funding, APS will target non-profits, municipalities, and low income participants. APS is proposing a budget of $1.2 million in this Plan to match the ARRA funding received from the State Energy Office in an effort to maximize the number of projects for the abovementioned market segments.

E. Powerful Communities - Wholesale Distributed Energy Feed-In Tariff

APS is proposing a wholesale DE FIT program named "Powerful Communities". APS's Powerful Communities program targets market segments that currently have a more difficult time accessing incentive funding though the current APS portfolio of RES programs; specifically low-income housing authorities, homeowner associations, multi-tenant facilities (residential and commercial), and not-for-profit charitable organizations. Resources eligible through this program are limited to renewable facilities between 30 kW and 200 kW, and the facility must be operational within 12 months of acceptance into the program. APS believes projects resulting from this program meet the definition of wholesale DE resources described in the RES rules.[46]

As proposed in this Plan, the Powerful Communities program will accept eligible projects on a first-come, first-serve basis during the three-year deployment period of 2011 to 2013. Participation is limited to 2 MW of eligible projects in each year of the program, for a cumulative program resource capacity total of 6 MW. Each project will qualify for only one DE incentive program, regardless of technology type. The Company is proposing a standard fixed price offer for the Powerful Communities program of $0.195 per kWh for the output of the system under a 20-year standardized agreement. The estimated annual cost of the program is $375,000, and the lifetime program commitment is approximately $22.5 million.

F. Schools and Government Program

In a separate application before the Commission, APS has proposed a new program for schools and governmental institutions as part of its DE program expansion.[47] The proposed Schools and Government Program offers schools on-site solar energy while eliminating up-front customer cost, and substantially reduces or eliminates up-front costs for governmental institutions.

Incorporating stakeholder feedback from various workshops conducted by APS, the 15 year contract that was originally proposed in the Company's application for the new Schools and Government Program has been modified to provide a stronger financial return that is closely aligned with the 10/20 offering that is not included in the program. The modified 15 year contract incentive levels are included in Exhibit 1 of the DEAP.

G. Community Power Project – Flagstaff Pilot

The Community Power Project - Flagstaff Pilot ("Community Power Project") was approved by the Commission on April 1, 2010.[48] Through the Community Power Project, APS will install up to 1.5 MW of distributed renewable energy systems. Full deployment is expected to be complete by December 2011. APS will maintain ownership of all facilities, with the exception of the solar hot water heaters, which will be provided to low-income customers who will own the systems.

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[46] A.A.C. R14-2-1805 (E).
[47] Docket No. E-01345A-10-0166.
[48] Decision No. 71646 (April 14, 2010).

As described in previous implementation plans, this program will initially be funded with RES rollover funds from previous budget years. Revenue requirements associated with APS's capital expenditures for installations deployed through the program will initially be funded through the RES adjustor. However, at the time of the Company's next rate case these capital expenditures would be incorporated into the Company's rate base.

H. Innovative Renewable Energy Projects

APS's DE RFP was designed to identify projects and strategies that will increase certainty of compliance with APS's RES DE targets, reduce the cost of DE incentives, and work to identify opportunities for program innovation. In requesting authorization for the resultant projects, APS forecast a lifetime contract commitment of $250 million. Following negotiations and final contract execution, APS committed $225 million towards all projects selected through the solicitation process.

APS seeks to continue the theme introduced by the 2008 initiative, while adjusting the designed outcome for 2011. Specifically, APS programs have sought to drive incentive costs down within the DE market segment. While this objective is squarely aligned with customer interest, it does not readily facilitate the installation of commercial technologies that are not specifically cost optimized for the DE market. For example, building integrated PV technologies present great long-term opportunities for Arizona homes and businesses, yet they are rarely cost competitive with traditional PV panel installations. Likewise, PV panels can be installed in innovative configurations that produce a wide array of site specific and potential community benefits, but again typically result in high per kWh installed cost.

Through the Innovative Renewable Energy Projects initiative, APS will seek to procure renewable resource installations designed to demonstrate innovative deployment opportunities and innovative technologies. The Company proposes to execute this program with the balance of the $25 million remaining from the approved lifetime commitment authorization for the DE RFP. Inasmuch as these projects are used to serve a specific customer, their energy will be applied to the appropriate DE target.[49] If the resulting resources are not categorized as DE, their output will be applied to the overall APS renewable energy target.

I. Marketing, Advertising and Partnership Development

APS's marketing efforts for 2011 will build on the 2010 marketing activities and will continue to advance several primary goals including:

1. Creating an increased awareness of the APS REIP available to customers;
2. Driving customer participation in the program by delivering relevant, motivational messaging about the APS REIP;
3. Promoting and developing consumer education and educational curriculum to communicate the benefits of supporting and adopting RE; and

[49] A.A.C. R14-2-1805.

4. Continuing to enhance customer experience with the decision-making and purchase process through APS's efforts (e.g., refining the application, decision-making, and tools) and those of the Company's stakeholder partners (e.g., QSI training).

The key marketing objectives for 2011 are to:

1) Heighten awareness and build acceptance among APS's customer base of distributed renewable energy technology;
2) Help customers recognize the ability of DE to meet their individual energy goals as well as those of Arizona; and
3) Support customers and encourage them to action through taking advantage of available renewable energy incentives.

To accomplish these objectives, APS's marketing strategy incorporates a combination of compelling messages, critical program partners, community outreach, and an effective and convincing use of media, both placed and earned.

To accomplish these program goals, APS's marketing strategies and tactics include the following:

- Identify, evaluate and refine messages to address adoption barriers for residential customers, builders, and commercial customers.
- Implement a media plan that includes mass and social media to raise awareness of renewable DE alternatives and motivate APS customers to adopt those technologies.
- Continue to use and refine direct marketing to motivate APS's customers to adopt DE solutions.
- Continue to educate customers about DE through events, seminars, workshops, and the APS website.
- Optimize the APS website as an information resource for customers, installers and other stakeholders. Leverage ongoing opportunities to enhance the website based on customer and stakeholder feedback.
- Partner with all ACC-regulated electric utilities on the *Arizona Goes Solar* website.
- Leverage online advertising and communications. Look for opportunities to incorporate social media tactics into the marketing mix.
- Create sales tools and marketing materials to support both residential and non-residential customer acquisition.
- Develop marketing efforts to create awareness of APS's partnerships with home builders (Solar Homes Program) and the benefits of purchasing a new home with solar.
- Sustain category growth by supporting participants in APS's QSI Program through APS's training program, referral process and co-operative advertising.
- Enhance interest and awareness in residential DE by working within communities and extending the reach of APS's marketing efforts.

- Partner with lending institutions to create programs that will help customers overcome obstacles with up-front financing.
- Sustain growth in RE adoption by educating customers on programs that reduce the upfront acquisition cost of DE (e.g., Community Power Project – Flagstaff Pilot, lease options).
- Develop a comprehensive program to promote participation in APS's Schools and Government Program.

1. *Key Marketing Initiatives for 2011*

The key marketing initiatives in 2011 will focus on driving the adoption of DE solutions among APS's customer base. These initiatives will incorporate efforts that help drive awareness of renewable energy solutions, and will include several programs and tools that enhance customers' experience with the renewable energy purchase process.

- Advertising – APS has experienced unprecedented participation levels in its REIP in 2010. The number of residential RE installations increased by over 250 percent for the time period of January 2010 through May 2010 compared to the same period in 2009. Despite this success, the Company still needs to continue aggressively promoting the adoption of DE technologies through advertising to help bring DE into mainstream customers' consideration set as they are making energy purchase decisions. The advertising will continue to heighten awareness of the key benefits of renewable energy and will reinforce the affordability given the various purchase and lease options available in the marketplace.

- *Arizona Goes Solar* Website – APS was instrumental in the effort to design and develop the *Arizona Goes Solar* website,[50] which was launched September 1, 2010. The Company will continue to play a leadership role in the evolution of the site in terms of its structure, content, and functionality. Additionally, APS will continue to explore ways in which traffic can be driven to the site given that it represents a unique educational forum for its customers.

- APS Website - APS will continue to refine the overall aps.com website and the renewable energy section of the site to educate customers. This effort will include expansion of customers' ability to conduct business with APS on the site. For example, residential customers were first able to submit reservation applications online in 2010. The website will be expanded to include additional functionality, such as the ability to track a reservation throughout the process and inclusion of other customer and reservation types. Further, APS plans to deploy a solar calculator in late 2010 that will provide customers with an indication of system cost, savings potential and resultant payback. In addition, based on market research on site usability, APS will continue to update site content to ensure that it satisfies

[50] Decision No. 71459 (January 29, 2010) required APS to participate in the creation of a new "Go Solar Arizona" website. Upon further research, it was determined that the Go Solar Arizona domain name was not available, and participating utilities agreed to name the website "Arizona Goes Solar."

customers' needs and that the information provided is presented in a way that is clear and understandable.

- Qualified Solar Installer ("QSI") Program – APS will continue to grow its base of QSIs by aggressively promoting the program to customers and the industry. Through the QSI Program, APS seeks to create a more satisfying purchase, installation, and ownership experience for its customers. One of the most challenging aspects for a customer installing renewable energy is the selection of a dealer or installer; referrals that will be available to customers both on APS's website and through the call center will minimize this challenge. Participating solar installers will reap several benefits from the program, including increased industry expertise from the QSI training, additional business opportunities from the referrals, and the ability to off-set their advertising cost through participation in APS's co-op advertising.

- High Visibility Customer Outreach Initiatives – APS will identify opportunities to participate in projects with high customer and public visibility to increase the awareness and real-world applications of renewable energy. Possible programs would include those that provide opportunities for public interaction with renewable technologies, demonstrate innovative uses of renewable technologies in built environments (e.g. retail areas, pedestrian thoroughfares, etc.), and/or integrate educational information related to renewable energy in dynamic learning environments (e.g. new communication channels, demonstration projects, etc.). Through these initiatives, APS seeks to improve the awareness and perceived viability of renewable technologies in an effort to increase customer participation in renewable energy solutions for their own homes and businesses.

- Arizona SmartPower – APS will continue to partner with SmartPower on several key initiatives. Arizona SmartPower will play a significant role in helping customers understand the various renewable energy options that exist in the marketplace. For example, customers have various solar product and financing solutions. Arizona SmartPower will provide an independent third-party review for customers, thus facilitating an informed decision-making process.

APS will continue to review the effectiveness of its marketing efforts and the associated marketing budget throughout the year and into the future. Modifications to APS's marketing strategies, tactics, and budget will be made to address changing market conditions and key lessons learned throughout the marketing process. The proposed annual marketing budget for 2011 to 2015 is detailed in Exhibit 2A.

J. Implementation and Administration for the Distributed Energy Program

The implementation strategy for the DE program was developed with the following targets:

- Developing an accurate, efficient and customer friendly process;
- Integrating the program processes into general business operations;

- Creating a scalable process that responds to adjustments in the volume of program participation; and
- Supporting the strategic marketing efforts of the program.

Accomplishing these objectives requires a considerable investment in program implementation. The DE program requires a substantial number of individual transactions and each transaction impacts numerous parts of APS's business infrastructure. The administrative tasks continue to increase as the existing customer base grows and complexities to the incentive program are introduced. As such, implementation costs for the DE programs are significant.

1. *Program Resources*

The implementation team is comprised of the personnel necessary to execute the DE incentive program. This team includes the fixed payroll personnel who are required to administer the reservation and interconnection applications and agreements, review system design for conformance with DEAP and interconnection requirements, process incentive payments, answer customer and installer questions about the program, and perform field inspections. Also included are variable payroll personnel required to tag utility equipment to identify potential backfeed sources and provide billing support to partial-requirements customers, as well as the personnel required to manage the execution of the DE program, develop and execute the marketing and advertising programs, and provide ongoing program monitoring and compliance reporting. The number of implementation team members required is directly related to the number of program participants.

There are also resources supporting the program that are neither part of the administrative nor the implementation teams. These personnel are considered "non-incremental" and are required to support the general operations of the utility and have responsibilities that are not directly related to the distributed program. These resources include but are not limited to personnel from regulation and pricing, accounting, legal, contract administration, and meter reading departments.

2. *Material Costs*

Measuring the actual number of kWh returned to the grid by DE resources requires the use of a bi-directional meter rather than a standard utility meter. The incremental cost charged to the RES is the difference in cost between the bi-directional meter and the standard utility meter.

For compliance verification and program evaluation purposes, the DEAP proposes to capture monthly meter reads for DE systems generating electricity. APS believes that customers will also be interested in the ability to track total kWh generated by their system. To facilitate both the meter read capture requirement and to help customers track the kWh production by the DE system, APS may install and read the system meter for participants in the program. The only costs charged to the RES are those costs associated with providing the second meter to record system production.

There are also incidental incremental material costs associated with the program including, but not limited to, system locks, tags, inspection tools, and transportation for inspection personnel.

APS may also install an interval recording meter on a sampling of sites. That data will be used to conduct studies on the coincidence of solar output as compared to APS's system load. The only material cost charged to the Program will be the incremental costs of the interval recording meter.

3. *Technological Improvements Required*

APS continues to review the existing process flows in order to ensure the effective and efficient use of resources required to implement the DE incentive program. These processes require integration with existing systems, including customer billing, the APS website, program and operations databases, accounting systems, and dispatch and scheduling tools. APS's 2010 Plan advanced several such projects that will facilitate additional efforts to further integrate RES programs and expand opportunities to offer streamlined interfaces for customers and stakeholders.

APS also continues the development of cost effective user-friendly tools for customers to determine the opportunity and benefits presented by solar systems. Based on the Company's experience to date, a customer who is considering investing in a renewable energy system for a home or business wants to know the financial benefits of such an investment, including both potential systems costs and impacts on monthly bills.

Leveraging the centralized database, APS is developing mapping tools which will facilitate the integration of DE solar installations into distribution asset managing, engineering, operations and maintenance infrastructure. This integration will support more comprehensive planning, engineering and operation of the distribution system.

In addition, APS continues work in the following areas:

- Database Integration: APS implemented IS projects that combine a number of individual databases into one centralized system. The consolidation helps ensure data accuracy, security, and consistency, as well as increasing overall processing and reporting efficiencies. This consolidation is designed to facilitate program customer support throughout APS's operation, including options for reservation status reporting (see below) and DE system reporting integration with customer billing.
- Interactive Web-based Project Tracking Application: Database integration will facilitate web-based project tracking milestones, for both contractors and customers, and will include an automated correspondence/payment processing feature. Both of these elements will improve processing time, ensure consistency and completeness of information, and reduce reservation coordinator processing time.

- Renewable Website: APS is in the process of launching a newly redesigned Renewable website. The updated website is designed to cater to four different customer sectors: residential customers, businesses, contractors, and builders. The site will include an increased use of video applications, customer testimonials, and sector-specific information with the aim of providing information necessary to drive customer participation in renewable energy programs.

APS will continue to make incremental improvements to this program, which will enable the Company to continue its progress in the implementation of technology improvements.

V. RENEWABLE RESEARCH, DEVELOPMENT, COMMERCIALIZATION AND INTEGRATION

APS proposes a budget allocation for RCD&I of renewable resources in its Plan. The purpose of this allocation is to enhance and accelerate the development, deployment, commercialization, and utilization of renewable resources for the benefit of APS customers. For 2011, APS proposes to specifically allocate a minimum of $500,000 of the total RDC&I budget of $2.0 million for research and development aimed at advancing the role of renewable energy in APS's resource mix. APS will prioritize projects and project funding to meet RES goals for renewable resources. Activities undertaken as part of this program are supported either solely by APS or in partnership with other organizations and entities including private industry, public research institutions, and government laboratories.

A. Research and Development

APS's commitments in 2011 for Research and Development will continue to include AzSMART in collaboration with Arizona State University. AzSMART is an analysis system tailored to examine the successful roll-out of a solar energy infrastructure in Arizona and to develop the required electric grid technologies which will enable such a solar infrastructure. The analysis system, which will leverage ASU's Decision Theater, will be able to evaluate the total effects of the introduction of significant levels of solar power generation in Arizona. The 2011 plan year will be the third of a three year commitment for this project.

In 2011, APS is planning to leverage research and development funds to support activities in specific areas such as energy storage, solar intermittency and variability and renewable technologies. APS will leverage its relationships with Arizona Universities and will solicit proposals from these schools to support research projects in these areas.

APS initiated an effort in 2010 to work with Northern Arizona University to record and analyze data collected through a broader PV Variability Study being conducted at the Company's Prescott Solar Generation site. This data collection and assessment will be coordinated with other available weather and solar data collections to further address the value and impacts of distributed and large scale solar generation.

B. Commercialization and Integration

APS continues to plan and develop commercialization and integration studies which provide direct value in planning the future direction of renewable energy. Some of those studies have identified opportunities for additional investigation, while others have provided direct benefit for the effective integration of renewable resources. In determining whether to fund new RDCI projects, APS will consider key functional areas including:

1. *Renewable Technologies*

This functional area includes such projects as studies of the attributes, characteristics, and costs of renewable energy technologies and the availability and viability of renewable energy resources in the state of Arizona and the Southwestern United States. Additionally, APS plans on continuing its ongoing efforts to address the values and impacts of the integration of renewable technologies into the utility's distribution, transmission, generation and resource planning design.

2. *Energy Storage*

APS's technical staff is currently planning and developing a distribution level energy storage project to provide APS a better understanding of the issues encountered when operating and controlling an energy storage system connected to the APS grid. APS views this project as one for demonstration and study purposes, and plans to study the abilities of Energy Storage Systems to address the following areas of focus: reducing the effect of short-term variability issues associated with Solar PV generation by providing a means of regulation, providing the ability to store and shift energy delivery to help make the load profile more constant, and to develop a deeper understanding of the cost, control and system opportunities with energy storage.

3. *Solar Integration Cost Study / Solar Variability and Intermittency*

In 2011, APS plans to study the integration costs of solar resources on the APS system. This study would provide APS with a better understanding of the positive benefits of solar resources to the utility system such as cost effective energy and long-term price stability, and will address the unique generating characteristics of solar resources as compared to conventional utility resources. This work will be based upon data acquired during a solar variability data acquisition project initiated in 2010.

4. *High Penetrations of Distributed Resources and Impacts on the Distribution System*

APS will continue to support studies that seek to develop a better understanding of the operational impacts, integration and interconnection issues, and strategic opportunities for distributed resources. Specific areas of study may include investigation of specific attributes of distributed resources including DE performance, reliability, monitoring, energy and storage dispatch, weather forecasting, and the interface between DE and the smart grid. This work will support the DOE funding grant that was awarded to APS in 2010 along with additional ancillary study projects around the Flagstaff Community Power Project and its distribution systems.

VI. COSTS OF THE 2011 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN

The cost of the APS Plan is comprised of three key cost segments: RG, DE, and RDC&I. A summary of the costs of those segments and the major components for each segment is included in Exhibit 2A. APS currently estimates the cost to comply with the RES to range between $92.5 million in 2011 to $170.0 million in 2015, with a five-year total of $658.0 million. Annual increases are driven mainly by annually increasing energy targets. As noted in Exhibit 2A, APS would anticipate that some funds collected in 2010 may not be spent or committed and will be available in 2011. At the time of this filing, APS cannot accurately predict the amount of uncommitted funds that may be available. The Company will provide an estimate of that information by November 1, 2010 or before the date of the Open Meeting to adopt this Plan, whichever is earlier.

RES funding is intended to cover the cost of utility-scale renewable generation in excess of the cost of conventional resource alternatives, incentive payments for DE resources, marketing expenses, and program implementation and administration costs. The costs for renewable generation are based on APS's most current insights into that market. The costs for DE incentives and the program budget are based on incentives developed as part of both Commission and APS hosted stakeholder workshops, and include APS's best estimates of market uptake for the various technologies available to consumers.

It is important to note that the total cost of renewable energy generation is not entirely reflected within the RES. The cost associated with a renewable PPA contract is collected through two rate mechanisms: the PSA and the RES adjustor. After a renewable PPA is executed, the portion of total cost that is comparable to conventional generation cost (the "at market" cost) is collected through the PSA, while the "above market" portion is collected through the RES adjustor. The costs that are reflected in the RES Implementation Plan represent only the "above market" costs. Therefore, the cost recovered through the RES adjustor represents only a fraction of total contract cost. As an example, in 2011 the gross total costs for renewable generation PPAs are estimated to be just over $51 million. The RES recovers $9.9 million dollars of these expenses. The remainder of those expenses are collected through the Company's PSA mechanism.

At this time, APS is requesting adjustor funding of $86.5 million for 2011 (the currently effective RES adjustor would generate approximately $80.7 million on an annualized basis). The requested adjustor amount, along with the $6 million already included in base rates, equals the $92.5 million of funding needed to meet the requirement. APS intends to request additional funding in each successive year of the Plan for the following calendar year's estimated cost. The estimates for Plan years 2011 to 2015, contained in Exhibit 2A, will be updated each year to determine the necessary level of RES funding from customers.

APS Renewable Energy Standard
Revised Implementation Plan for 2011-2015
October 13, 2010

Exhibit 1

RES Plan and Program Summary

APS Renewable Energy Standard
Revised Implementation Plan for 2011-2015
October 13, 2010

Exhibit 1A summarizes the RES Implementation Plan objectives and outcomes.

Exhibit 1B outlines the annual APS renewable energy targets by renewable generation and distributed energy, anticipated needs, and summarizes the proposed budget.

Exhibit 1C is a graphic representation of the renewable generation and distributed energy components of the RES portfolio for 2011 through 2015

Exhibit 1D(a) is a detailed graphic representation of the residential distributed energy component of the RES portfolio for 2011 through 2015

Exhibit 1D(b) is a detailed graphic representation of the non-residential distributed energy component of the RES portfolio for 2011 through 2015

Exhibit 1A: APS RES Implementation Plan 2011 Overview

Implementation Plan Objectives	✧ **Compliance with all portions of RES Rules and 2009 Settlement Agreement** ✧ **Update to AZ Sun projects** ✧ **Funding sufficient to exceed both the residential and non-residential DE target**
2011 Total RES Production Budget	✧ Total RES target: 853,923 MWh ✧[1] Total expected RES production: 1,022,434 MWh ✧ Renewable Generation: $21.2 million ✧ DE Contracts & Incentives: $69.3 million ✧ Research, Development, Commercialization, & Integration: $2.0 million ✧ **Total: $92.5 million**
2011 Renewable Generation Projected Outcomes	✧ Total expected generation: 851,805 MWh ✧ Nearly 1,030 MW of renewable generation capacity by 2015
2011 Customer Sited DE Commitments and Incentive Budget	✧ Non-residential lifetime PBI authorization: $670.0 million ✧ DE target: 213,481 MWh ✧ Expected DE production: 295,629 MWh ✧ Residential Incentives: $34.0 million ✧ Non-residential UFI: $2.0 million ✧[2] Non-residential PBI and DE RFP: $9.0 million ✧ Wholesale DE and Powerful Communities: $0.4 million ✧ **Total Customer Sited DE incentives: $56.8 million**
2011 Customer Sited DE Projected Outcomes	✧ Exceed total DE requirement ✧ 121,255 total residential MWh ✧ 153,026 total non-residential MWh ✧ 21,348 of wholesale (applied to non-residential)
2011 RES Adjustor Rate Schedule & Monthly Caps	✧ $0.009663 per kWh (2010: $0.008662 per kWh) ✧ Residential cap $3.87 (2010: $3.46) ✧ Non-residential (under 3 MW) cap $143.56 (2010: $128.70) ✧ Non-residential (3 MW and over) cap $430.67 (2010: $386.10)

Notes:

[1] Net of Green Choice requirement. Represents energy available to meet RES requirement.

[2] Includes 2011 commitments associated with PBIs up to the $320 million authorization provided in Commission Decision No. 71459 as well as the approved PBI annual lifetime expansion for 2010 and the DE RFP.

Exhibit 1B: APS 2011 - 2015 RES Program Summary

Line No.	APS RES Targets (MWh)	2011	2012	2013	2014	2015	Line No.
1							1
2	APS Estimated Retail Sales	28,464,088	28,463,419	28,782,771	29,407,916	29,951,134	2
3	APS RES Target - % of Retail Sales	3.00%	3.50%	4.00%	4.50%	5.00%	3
4	**APS Total RES Requirement**	**853,923**	**996,220**	**1,151,311**	**1,323,356**	**1,497,557**	4
5							5
6	**RES Generation Target**	**640,442**	**697,354**	**805,918**	**926,349**	**1,048,290**	6
7							7
8	Distributed Energy % of RES Requirement	25%	30%	30%	30%	30%	8
9	**Distributed Energy Requirement**	**213,481**	**298,866**	**345,393**	**397,007**	**449,267**	9
10	Residential Distributed Energy (50%)	106,741	149,433	172,697	198,504	224,634	10
11	Non-Residential Distributed Energy (40%)	85,392	119,546	138,157	158,803	179,707	11
12	Wholesale Distributed Energy (10%)	21,348	29,887	34,539	39,701	44,927	12

Line No.	Renewable Generation (MWh)	2011	2012	2013	2014	2015	Line No.
13							13
14							14
15	RES Generation Target	640,442	697,354	805,918	926,349	1,048,290	15
16	Existing/Planned Generation Owned/Contracted	851,805	1,237,390	1,366,549	2,595,264	3,200,663	16
17	Projected Green Power Sales [1]	125,000	150,000	150,000	150,000	150,000	17
18	Total RES Generation Available for Compliance	726,805	1,087,390	1,216,549	2,445,264	3,050,663	18
19	**Energy Applied To/(Withdrawn From) APS Bank for RES**	**86,363**	**390,036**	**410,631**	**1,518,915**	**2,002,373**	19
20	**(line 18 - line 15)**						20
21	**Distributed Energy (MWh)**						21
22		2011	2012	2013	2014	2015	22
23	RES Distributed Energy Requirement	213,481	298,866	345,393	397,007	449,267	23
24	Estimated Existing/Planned Distributed Energy [2,3]	274,281	415,000	530,048	623,570	687,824	24
25	Wholesale	21,348	29,887	34,539	39,701	44,927	25
26	Total Distributed Energy	295,629	444,887	564,587	663,271	732,751	26
27							27
28	**Energy Applied To/(Withdrawn From) APS Bank for RES**	**82,148**	**146,021**	**219,194**	**266,264**	**283,484**	28
29	**(line 26 - line 23)**						29
30	**APS RES Budget Summary ($ MM)**						30
31		2011	2012	2013	2014	2015	31
32	Total Renewable Generation	$ 21.2	$ 36.6	$ 44.6	$ 77.2	$ 86.6	32
33	Total Distributed Energy	$ 69.3	$ 83.9	$ 70.8	$ 76.5	$ 81.4	33
34	Research, Development, Commercialization, & Integration	$ 2.0	$ 2.0	$ 2.0	$ 2.0	$ 2.0	34
35	**Total RES Program Budget**	**$ 92.5**	**$ 122.5**	**$ 117.4**	**$ 155.7**	**$ 170.0**	35

Notes:

[1] The Green Choice (Rate Schedules GPS-1, GPS-2, GPS-3, Solar-3) sales are included only for procurement purposes. APS intends to procure enough energy to achieve RES compliance and to provide for Green Power purchased by customers. Green Power sold to customers will not be counted towards RES compliance and the cost of those resources is not included in the Renewable Generation budget (per ACC Decision No. 70313).

[2] For 2011, the Estimated Existing Distributed Energy is the projected DE at the end of 2010 based on the best available information at the time of the filing.

[3] Assumes a lifetime PBI authorization expansion to nearly $1.1 billion. Over 100,000 MWhs is confirmed or in service under the $320 million lifetime PBI authorization received as part of Decision No. 71459 as well as the DE RFP.

Exhibit 1C: Energy Contributions to RES By Resource Group

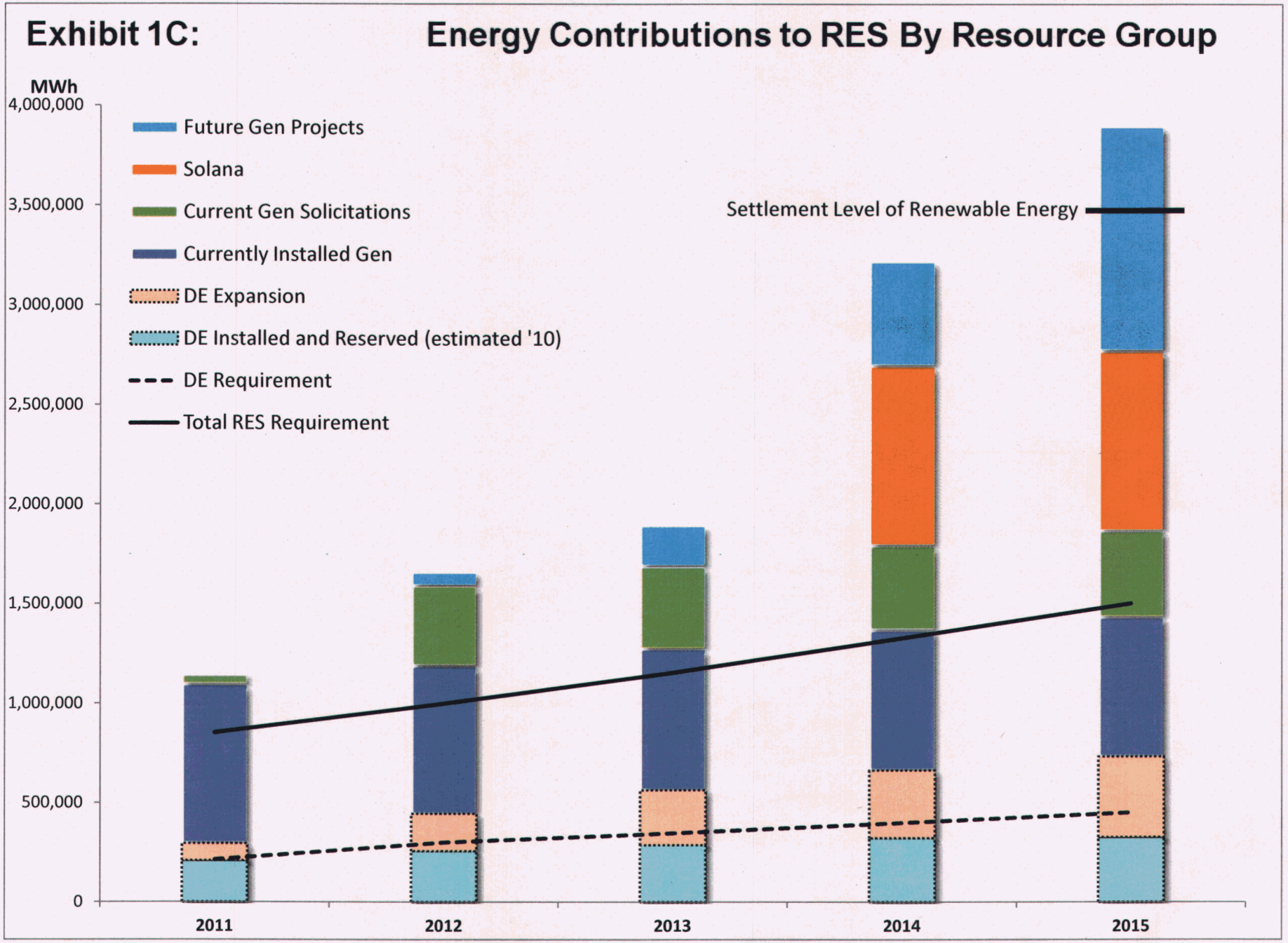


Exhibit 1D(a): Residential Customer Sited Distributed Energy

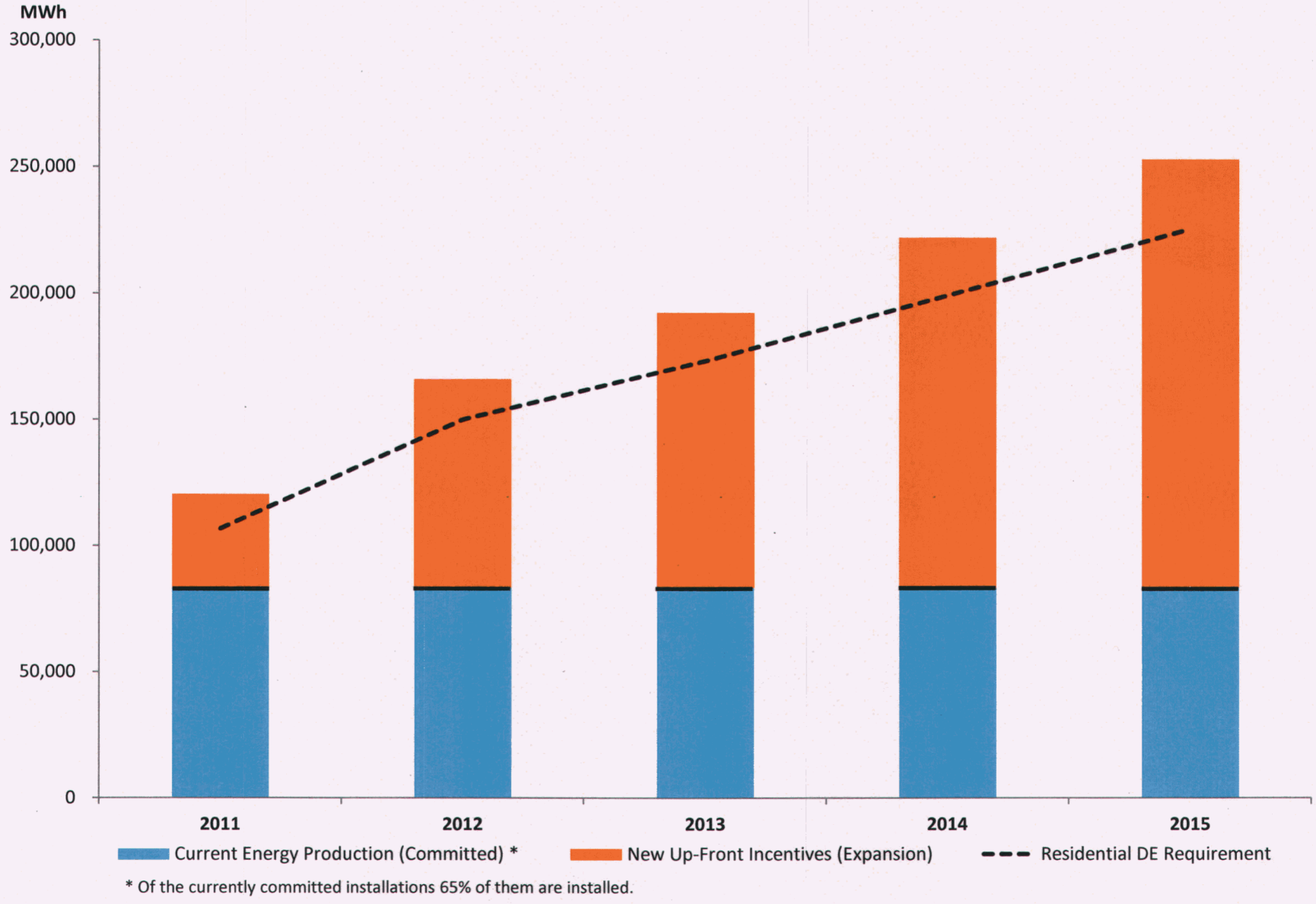
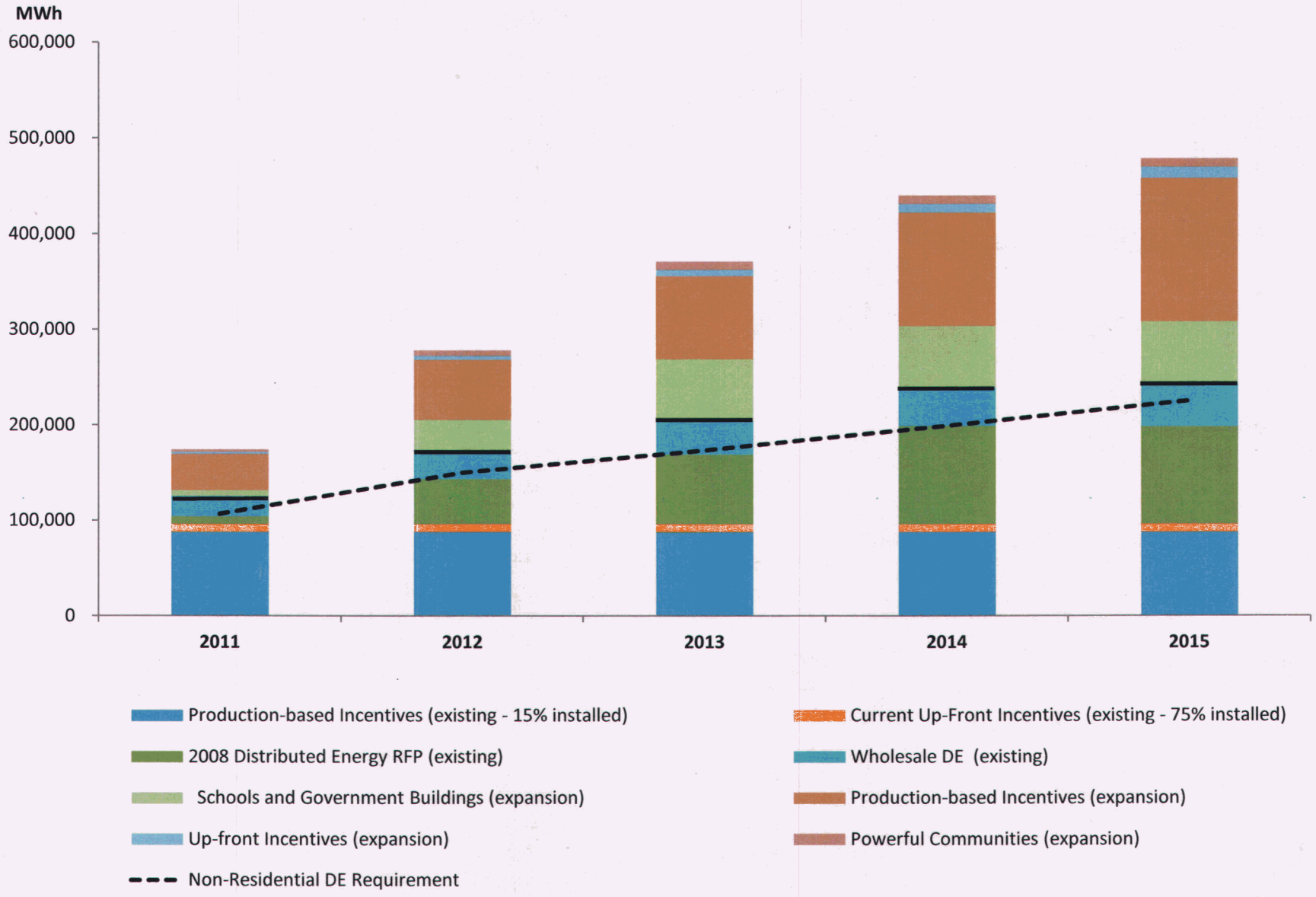


Exhibit 1D(b): Non-Residential Customer Sited Distributed Energy



APS Renewable Energy Standard
Revised Implementation Plan for 2011-2015
October 13, 2010

Exhibit 2

RES Budget Detail

APS Renewable Energy Standard
Revised Implementation Plan for 2011-2015
October 13, 2010

Exhibit 2A details the proposed RES budget for the 2011 through 2015 program by line item for both renewable generation and for distributed energy.

Exhibit 2B details the changes between the initial proposed RES budget filed July 1, 2010 with the revised proposed RES budget filed October 13, 2010.

Exhibit 2A: APS 2011 - 2015 RES Budget Summary (in $000,000's)

Line No.		2011	2012	2013	2014	2015	Total	Line No.
1	**Renewable Generation**							1
2	***RG Contracts and O/M***							2
3	Purchases and Generation [1]	$ 18.8	$ 35.9	$ 43.7	$ 76.2	$ 85.5	$ 260.1	3
4	Administration	1.5	1.5	1.6	1.6	1.7	7.9	4
5	Implementation	1.5	1.5	1.6	1.6	1.7	7.9	5
6	***Total RG Contracts and O/M***	***$ 21.8***	***$ 38.9***	***$ 46.9***	***$ 79.4***	***$ 88.9***	***$ 275.9***	6
7	***Offsets***							7
8	Estimated Green Choice Revenue Credit	$ (0.6)	$ (2.3)	$ (2.3)	$ (2.3)	$ (2.3)	$ (9.8)	8
9								9
10	***Total Renewable Generation*** *(line 6 + line 8)*	***$ 21.2***	***$ 36.6***	***$ 44.6***	***$ 77.1***	***$ 86.6***	***$ 266.1***	10
11								11
12	**Customer Sited Distributed Energy**							12
13	***Existing Contracts and Commitments***							13
14	DE RFP	$ 1.1	$ 4.9	$ 7.4	$ 9.6	$ 9.7	$ 32.7	14
15	Innovative Technologies [2]	0.3	2.3	2.3	2.3	2.3	9.5	15
16	Production-based Incentives (Existing)	7.6	13.3	17.7	23.2	29.0	90.8	16
17	Flagstaff CPP	0.4	0.2	-	-	-	0.6	17
18	Wholesale DE [3]	0.2	0.2	0.4	0.5	0.7	2.0	18
19	ARRA Projects/Incentives [4]	1.2	-	-	-	-	1.2	19
20	2010 Residential Incentive Commitment [5]	1.7	-	-	-	-	1.7	20
21	***Total Existing Contracts and Commitments***	***$ 12.5***	***$ 20.9***	***$ 27.8***	***$ 35.6***	***$ 41.7***	***$ 138.5***	21
22	***New Incentives and Commitments***							22
23	Residential Up-front	$ 34.0	$ 34.0	$ 19.0	$ 19.0	$ 19.0	$ 125.0	23
24	Schools and Government Buildings Program	7.3	13.4	8.4	5.9	4.6	39.6	24
25	Non-Residential Up-front	2.0	2.0	2.0	2.0	2.0	10.0	25
26	Production Based Incentives (New) [6]	0.3	0.3	0.4	0.4	0.4	1.8	26
27	Powerful Communities [7]	0.2	0.6	0.9	1.1	1.1	3.9	27
28	EARN [8]	0.5	0.5	0.5	0.5	0.5	2.5	28
29	***Total New Incentives and Commitments***	***$ 44.3***	***$ 50.8***	***$ 31.2***	***$ 28.9***	***$ 27.6***	***$ 182.8***	29
30	***Total Incentives and Commitments*** *(line 21 + line 29)*	***$ 56.8***	***$ 71.7***	***$ 59.0***	***$ 64.5***	***$ 69.3***	***$ 321.3***	30
31	***Non-Incentive Distributed Energy Costs***							31
32	Administration	$ 1.4	$ 1.5	$ 1.5	$ 1.6	$ 1.6	$ 7.6	32
33	Implementation	3.7	3.8	3.9	4.0	4.1	19.5	33
34	Information Technology	2.0	1.5	1.0	1.0	1.0	6.5	34
35	Marketing & Outreach	5.4	5.4	5.4	5.4	5.4	27.0	35
36	Customer Self-Directed [9]	-	-	-	-	-	-	36
37	***Total Non-Incentive DE Costs***	$ 12.5	$ 12.2	$ 11.8	$ 12.0	$ 12.1	$ 60.6	37
38	***Total Customer Sited DE*** *(line 30 + line 37)*	***$ 69.3***	***$ 83.9***	***$ 70.8***	***$ 76.5***	***$ 81.4***	***$ 381.9***	38
39	***Research, Development, Commercialization, & Integration***	***$ 2.0***	***$ 2.0***	***$ 2.0***	***$ 2.0***	***$ 2.0***	***$ 10.0***	39
40	**Total RES Budget** *(line 10 + line 38 + line 39)*	**$ 92.5**	**$ 122.5**	**$ 117.4**	**$ 155.6**	**$ 170.0**	**$ 658.0**	40

Notes:

[1] Includes AZ Sun program. For additional detail refer to Exhibits 3A and 3E.

[2] Assumption of deployment of resource in mid Nov. 2011. Utilizes funds authorized under the DE RFP.

[3] This line item is made up of a project (Snowflake White Mountain Power) that is split between Renewable Generation (RG) and Distributed Energy (DE). The split is based on the amount of the wholesale DE component allowed in a given year.

[4] American Recovery and Reinvestment Act matching funding for renewable incentives.

[5] The incentive commitment from reducing incentives from $3.00/watt to $2.15/watt was $0.9M (Commission Decision No. 71686). Additionally, the incentive commitment from the reduction of incentives from $1.95/watt to $1.75/watt was $0.75M as derived from Commission Decision No. 71913.

[6] Represents only the portion of the new PBI incentives that would be expected to be paid in a given year. All new projects are assumed to have a mid-year in-service date and, as a result, actual commitments are double that shown in Year One. See also Exhibit 4C.

[7] Powerful Communities is APS's proposed FiT program for wholesale DE.

[8] The Energy Assistance for Renewable Neighborhoods program (formally known as APS's Distributed Public Assistance Program).

[9] As discussed in the Implementation Plan, no customers have requested self-direction and therefore no allocation has been made.

Exhibit 2B: Revised 2011 RES IP budget changes from the July filed 2011 RES IP (in $000,000's)

Line No.		Revised IP 2011	Original IP 2011	Change 2011	Explanation (source exhibit)
1	**Renewable Generation**				
2	***RG Contracts and O/M***				
3	Purchases and Generation [1]	$ 18.8	$ 17.0	$ 1.8	Reflects the additional capacity from SWMP and adjustments to in-services dates for AZ Sun Projects (3C).
4	Administration	1.5	1.5	-	
5	Implementation	1.5	1.5	-	
6	***Total RG Contracts and O/M***	***$ 21.8***	***$ 20.0***	***$ 1.8***	
7	***Offsets***				
8	Estimated Green Choice Revenue Credit	$ (0.6)	$ (0.6)	$ -	
9	2009 Rollover Offset	-	(3.2)	3.2	$3.2M offset to be used for 2010 residential incentives as per Decision No. 71913.
10	***Total Renewable Generation*** *(line 6 + line 8 + line 9)*	***$ 21.2***	***$ 16.2***	***$ 5.0***	***See above notes***
11	**Customer Sited Distributed Energy**				
12	***Existing Contracts and Commitments***				
13	DE RFP	$ 1.1	$ 1.1	$ -	
14	Innovative Technologies [2]	0.3	0.3	-	
15	Production-based Incentives (Existing)	7.6	15.3	-	
16	Flagstaff CPP	0.4	0.4	(7.7)	
17	Wholesale DE [3]	0.2	0.2	-	
18	ARRA Projects/Incentives [4]	1.2	1.2	-	
19	2010 Residential Incentive Commitment [5]	1.7	0.9	-	
20	***Total Existing Contracts and Commitments***	***$ 12.5***	***$ 19.4***	***$ (6.9)***	***See above notes***
21	***New Incentives and Commitments***				
22	Residential Up-front	$ 34.0	$ 34.0	$ -	Additional $750,000 required from $1.95/watt to $1.75/watt step down (4A)
23	Schools and Government Buildings Program	7.3	7.3	-	
24	Non-Residential Up-front	2.0	2.0	-	
25	Production Based Incentives (New) [6]	0.3	2.1	-	
26	Powerful Communities [7]	0.2	0.4	(1.8)	On-line project estimation, funding requirements, and associated changes (4C)
27	EARN [8]	0.5	0.5	(0.2)	Use of a half year convention for Powerful Communities program in lieu of full year convention (4C)
28	***Total New Incentives and Commitments***	***$ 44.3***	***$ 46.3***	***$ (2.0)***	***See above notes***
29	***Total Incentives and Commitments*** *(line 21 + line 29)*	***$ 56.8***	***$ 65.7***	***$ (8.9)***	***See above notes***
30	***Non-Incentive Distributed Energy Costs***				
31	Administration	$ 1.4	$ 1.4	$ -	
32	Implementation	3.7	3.7	-	
33	Information Technology	2.0	2.0	-	
34	Marketing & Outreach	5.4	5.4	-	
35	Customer Self-Directed [9]	-	-	-	
36	***Total Non-Incentive DE Costs***	$ 12.5	$ 12.5	$ -	
37	***Total Customer Sited DE*** *(line 30 + line 37)*	***$ 69.3***	***$ 78.2***	***$ (8.9)***	***See above notes***
38	***Research, Development, Commercialization, & Integration***	***$ 2.0***	***$ 2.0***	***$ -***	
39	**Total RES Budget** *(line 10 + line 38 + line 39)*	***$ 92.5***	***$ 96.4***	***$ (3.9)***	***See above notes***

APS Renewable Energy Standard
Revised Implementation Plan for 2011-2015
October 13, 2010

Exhibit 3

Renewable Generation

APS Renewable Energy Standard
Revised Implementation Plan for 2011-2015
October 13, 2010

Exhibit 3A details the expected energy contribution from existing and planned renewable generation projects.

Exhibit 3B details the expected capacity contribution from existing and planned renewable generation projects.

Exhibit 3C details the estimated RES cost for each existing and planned renewable generation project.

Exhibit 3D details the estimated cost per MWh for each existing and planned renewable generation project.

Exhibit 3E details the AZ Sun program sample revenue requirements.

Exhibit 3A: APS Existing and Targeted Generation (MWh)

Line No.		2011	2012	2013	2014	2015	Total	Line No.
1	***Existing Contracts and APS Resources:***							1
2	*Solar:*							2
3	APS-Owned PV [1]	15,937	15,937	15,937	15,937	15,937	79,685	3
4	Saguaro CSP (APS-Owned)	2,015	2,015	2,015	2,015	2,015	10,075	4
5	2009 Small Generation [2]	20,952	48,399	48,052	47,707	47,365	212,475	5
6	AZ Sun: Luke AFB	21,900	32,850	43,800	54,750	65,700	219,000	6
7	AZ Sun: Gila Bend	8,306	39,420	39,420	39,420	39,420	165,986	7
8	Solana CSP	-	-	-	903,349	903,349	1,806,698	8
9	*Total Solar*	*69,110*	*138,621*	*149,224*	*1,063,178*	*1,073,786*	*2,493,919*	9
10	*Wind:*							10
11	Aragonne Mesa	269,239	269,239	269,239	269,239	269,239	1,346,195	11
12	High Lonesome	299,592	299,592	299,592	299,592	299,592	1,497,960	12
13	Perrin Ranch	-	282,000	282,000	282,000	282,000	1,128,000	13
14	*Total Wind*	*568,831*	*850,831*	*850,831*	*850,831*	*850,831*	*3,972,155*	14
15	*Geothermal:*							15
16	CE Turbo	78,174	78,174	78,174	78,174	78,174	390,870	16
17	*Total Geothermal*	*78,174*	*78,174*	*78,174*	*78,174*	*78,174*	*390,870*	17
18	*Biomass/Biogas:*							18
19	Snowflake White Mountain Power [3]	114,394	56,487	25,029	19,867	14,641	230,418	19
20	Sexton City of Glendale Landfill	21,296	21,296	21,296	21,296	21,296	106,480	20
21	*Total Biomass/Biogas*	*135,690*	*77,783*	*46,325*	*41,163*	*35,937*	*336,898*	21
22								22
23	***Subtotal - Contracted Projects***	***851,805***	***1,145,409***	***1,124,554***	***2,033,346***	***2,038,728***	***7,193,842***	23
24								24
25	***Targeted Additions:***							25
26	Solar Projects (Small Gen S.O.) [4, 5]	-	38,325	104,025	169,725	197,100	509,175	26
27	High Capacity Factor Project (Small Gen S.O.) [4]	-	-	18,615	37,230	37,230	93,075	27
28	Solar Project '12	-	31,938	54,750	54,750	54,750	196,188	28
29	Solar Project '14	-	-	-	31,938	54,750	86,688	29
30	AZ Sun PV Projects '11-'12 (17 MW) [6]	-	21,718	37,230	37,230	37,230	133,408	30
31	AZ Sun PV Projects '12-'15 (50 MW) [7]	-	-	27,375	82,125	109,500	219,000	31
32	High Capacity Factor Project '14	-	-	-	148,920	148,920	297,840	32
33	High Capacity Factor Project '15	-	-	-	-	297,840	297,840	33
34	Future Wind Project	-	-	-	-	224,615	224,615	34
35	***Subtotal - Targeted Additions***	***-***	***91,981***	***241,995***	***561,918***	***1,161,935***	***2,057,829***	35
36	**Total Energy**	**851,805**	**1,237,390**	**1,366,549**	**2,595,264**	**3,200,663**	**9,251,671**	36

Notes:

[1] Includes the RES multiplier for in-state solar installation prior to 12/31/2005.

[2] Consists of three projects that aggregate to 20MW.

[3] As noted in Exhibit 2, this project is split between Renewable Generation (RG) and Distributed Energy (DE). As the DE MWh requirement increases, the amount shown here as allocated to RG decreases.

[4] These projects are part of APS's proposed Small Generator Standard Offer program.

[5] Assumes nine photovoltaic installations at 10MW each with three installations deployed annually between 2012 - 2014.

[6] Consists of one 17MW project, in addition to the existing AZ Sun contracts noted on lines 5 and 6, to make up the remainder of the 2011-2012 of 50MW of required developments.

[7] Assumes a staggered deployment of two projects summing to 50MW per line item. For additional detail on the AZ Sun program see Exhibit 3E.

Exhibit 3B: APS Existing and Targeted Generation Capacity (MW)

Line No.		2011	2012	2013	2014	2015	Line No.
1	***Existing Contracts:***						1
2	Solar:						2
3	APS-Owned PV [1]	5	5	5	5	5	3
4	Saguaro CSP (APS-Owned) [1]	1	1	1	1	1	4
5	2009 Small Generation [2]	20	20	20	20	20	5
6	AZ Sun: Luke AFB	15	15	15	15	15	6
7	AZ Sun: Gila Bend	18	18	18	18	18	7
8	Solana CSP	-	-	-	283	283	8
9	*Total Solar*	*59*	*59*	*59*	*342*	*342*	9
10	*Wind:*						10
11	Aragonne Mesa	90	90	90	90	90	11
12	High Lonesome	100	100	100	100	100	12
13	Perrin Ranch	-	99	99	99	99	13
14	*Total Wind*	*190*	*289*	*289*	*289*	*289*	14
15	*Geothermal:*						15
16	CE Turbo	10	10	10	10	10	16
17	*Total Geothermal*	*10*	*10*	*10*	*10*	*10*	17
18	*Biomass/Biogas:*						18
19	Snowflake White Mountain Power [3]	25	15	10	10	10	19
20	Sexton City of Glendale Landfill	3	3	3	3	3	20
21	*Total Biomass/Biogas*	*28*	*18*	*13*	*13*	*13*	21
22	***Subtotal - Contracted Projects***	***287***	***376***	***371***	***654***	***654***	22
23	**Targeted Additions:**						23
27	Solar Projects (Small Gen S.O.) [4, 5]	-	30	60	90	90	27
28	High Capacity Factor Project (Small Gen S.O.) [4]	-	-	5	5	5	28
29	Solar Project '12	-	25	25	25	25	29
30	Solar Project '14	-	-	-	25	25	30
31	AZ Sun PV Projects '11-'12 (17 MW) [6]	-	17	17	17	17	31
32	AZ Sun PV Projects '12-'15 (50 MW) [7]	-	-	25	50	50	32
33	High Capacity Factor Project '14	-	-	-	20	20	33
34	High Capacity Factor Project '15	-	-	-	-	40	34
35	Future Wind Project	-	-	-	-	100	35
36	***Subtotal - Targeted Additions***	***-***	***72***	***132***	***232***	***372***	36
	Total Generation	**287**	**448**	**503**	**886**	**1,026**	

Notes:

[1] APS Solar capacity shown in MWac.

[2] Consists of three projects that aggregate to 20MW.

[3] As noted in Exhibit 2, this project is split between Renewable Generation (RG) and Distributed Energy (DE). As the DE MWh requirement increases, the amount shown here as allocated to RG decreases.

[4] These projects are part of APS's Small Generator Standard Offer program.

[5] Assumes nine photovoltaic installations at 10MW each with three installations deployed annually between 2012 - 2014.

[6] Consists of one 17MW project, in addition to the existing AZ Sun contracts noted on lines 5 and 6, to make up the remainder of the 2011-2012 of 50MW of required developments.

[7] Assumes a staggered deployment of two projects summing to 50MW per line item. For additional detail on the AZ Sun program see Exhibit 3E.

Redacted

Exhibit 3C: APS Renewable Existing and Targeted Generation RES Costs (in $000,000's)

Line No.		2011	2012	2013	2014	2015	Total	Line No.
1	*Existing Contracts:*							1
2	Solar:							2
3	APS-Owned PV [1]							3
4	Saguaro CSP (APS-Owned) [1]							4
5	2009 Small Generation [2]							5
6	AZ Sun: Luke AFB							6
7	AZ Sun: Gila Bend							7
8	Solana CSP							8
9	*Total Solar*							9
10	*Wind:*							10
11	Aragonne Mesa							11
12	High Lonesome							12
13	Perrin Ranch							13
14	*Total Wind*							14
15	*Geothermal:*							15
16	CE Turbo							16
17	*Total Geothermal*							17
18	*Biomass/Biogas:*							18
19	Snowflake White Mountain Power [3]							19
20	Sexton City of Glendale Landfill							20
21	*Total Biomass/Biogas*							21
22	***SubTotal - Contracted Projects***							22
23	***Targeted Additions:***							23
24	Solar Projects (Small Gen S.O.) [4, 5]							24
25	High Capacity Factor Project (Small Gen S.O.) [4]							25
26	Solar Project '12							26
27	Solar Project '14							27
28	AZ Sun PV Projects '11-'12 (17 MW) [6]							28
29	AZ Sun PV Projects '12-'15 (50 MW) [7]							29
30	High Capacity Factor Project '14							30
31	High Capacity Factor Project '15							31
32	Future Wind Project							32
33	***Total - Targeted Additions***							33
	Total Renewable Gen and Purchases Costs	**$ 18.8**	**$ 35.9**	**$ 43.7**	**$ 76.2**	**$ 85.5**	**$ 260.1**	

Notes:

[1] Project is APS owned and was funded by customers under the Environmental Portfolio Standard. There is no recurring contract cost to be funded by the RES.

[2] Consists of three projects that aggragate to 20MW.

[3] As noted in Exhibit 2, this project is split between Renewable Generation (RG) and Distributed Energy (DE). As the DE MWh requirement increases, the amount shown here as allocated to RG decreases.

[4] These projects are part of APS's Small Generator Standard Offer program.

[5] Assumes nine photovoltaic installations at 10MW each with three installations deployed annually between 2012 - 2014.

[6] Consists of one 17MW project to make up the remainder of the 2011-2012 of 50MW of required developments.

[7] Assumes a staggered deployment of two projects summing to 50MW per line item. For additional detail on the AZ Sun program see Exhibit 3E.

Redacted

Exhibit 3D: Existing and Targeted APS Renewable Generation RES Costs ($/MWh) [1]

Line No.		2011	2012	2013	2014	2015	Line No.
	Existing Contracts:						
1	*Solar:*	[redacted]					1
2	2009 Small Generation [2]						2
3	Solana CSP						3
4	Wind:						4
5	Aragonne Mesa						5
6	High Lonesome						6
7	Perrin Ranch						7
8	*Geothermal:*						8
9	CE Turbo						9
10	*Biomass/Biogas:*						10
11	Snowflake White Mountain Power [3]						11
12	Sexton City of Glendale Landfill						12
13	***Targeted Additions:***						13
14	Solar Projects (Small Gen S.O.) [4]						14
15	High Capacity Factor Project (Small Gen S.O.) [4]						15
16	Solar Project '12						16
17	Solar Project '14						17
18	High Capacity Factor Project '14						18
19	High Capacity Factor Project '15						19
20	Future Wind Project						20

Notes:

[1] This Exhibit is only a tool used to assess the cost per MWh each renewable generation resource contributes.

[2] Consists of three projects that aggregate to 20MW.

[3] As noted in Exhibit 2, this project is split between Renewable Generation (RG) and Distributed Energy (DE). As the DE MWh requirement increases, the amount shown here as allocated to RG decreases.

[4] These projects are part of APS's proposed Small Generator Standard Offer program.

Exhibit 3E: AZ Sun Program Revenue Requirements

AZ Sun Revenue Requirements (in $000,000's)[1,2,3]

	MW	Est. In-Service	2011	2012	2013	2014	2015
Existing Contracts[4]							
AZ Sun: Luke AFB	15	Jun-11	$ 5.1	$ 9.9	$ 9.0	$ 8.0	$ 7.3
AZ Sun: Gila Bend	18	Nov-11	$ 2.6	$ 10.9	$ 10.1	$ 8.9	$ 8.1
Estimated Projects[5]							
AZ Sun Projects '11-'12	17	TBD	$ 1.3	$ 8.3	$ 7.7	$ 6.8	$ 6.1
AZ Sun Projects '12-'15	50	TBD	$ -	$ 6.2	$ 28.9	$ 31.6	$ 28.1
Revenue Requirement Total	**100**		**$ 9.0**	**$ 35.3**	**$ 55.7**	**$ 55.3**	**$ 49.6**

Total AZ Sun Estimated Costs to the RES Adjustor (in $000,000's)[6]

	MW		2011	2012	2013	2014	2015
Existing Contracts[4]							
AZ Sun: Luke AFB	15	Jun-11	$ 5.1	$ 4.9	$ -	$ -	$ -
AZ Sun: Gila Bend	18	Nov-11	$ 2.6	$ 5.4	$ -	$ -	$ -
Estimated Projects[5]							
AZ Sun Projects '11-'12	17	TBD	$ 1.3	$ 4.1	$ -	$ -	$ -
AZ Sun Projects '12-'15	50	TBD	$ -	$ 6.2	$ 28.9	$ 15.8	$ -
RES Cost Total	**100**		**$ 9.0**	**$ 20.6**	**$ 28.9**	**$ 15.8**	**$ -**

Notes:

[1] Revenue requirement assumes ratepayers benefit from a 30% investment tax credit in accordance with Federal tax laws.

[2] Revenue requirement calculation assumes a capital structure of 46.2% debt at a 7.5% incremental rate, and 53.8% equity at 11%.

[3] Assumes a total project life of 30 years.

[4] Luke AFB and Gila Bend projects are based on executed agreements under the AZ Sun Program.

[5] Actual capacity and timing of estimated projects is yet to be determined.

[6] Assumes rate case adjudication July 2012 and July 2014.

APS Renewable Energy Standard
Revised Implementation Plan for 2011-2015
October 13, 2010

Exhibit 4

Customer Sited Distributed Energy

Annual Budget Detail

APS Renewable Energy Standard
Revised Implementation Plan for 2011-2015
October 13, 2010

Exhibit 4A details the annual incentive budget by residential and non-residential classifications.

Exhibit 4A(i) details the changes between the initial proposed annual incentive budget filed July 1, 2010 with the revised proposed annual incentive budget filed October 13, 2010.

Exhibit 4B details the estimated energy contribution from existing and planned distributed generation projects.

Exhibit 4C details the estimated total cost of APS' Production-Based Incentive program, including the requested lifetime authorization increases.

Exhibit 4C(i) details the budgeted annualized expansion of new PBI contracts for the plan years of 2011-2015.

Exhibit 4D details the portion of the Flagstaff Community Power Project that is applicable to the RES adjustor.

Exhibit 4A: APS Customer Sited Distributed Energy Incentive Program Costs (in $000,000's)

Line No.		2011	2012	2013	2014	2015	Total	Line No.
1	Residential							1
2	Up-Front Incentives	$ 34.0	$ 34.0	$ 19.0	$ 19.0	$ 19.0	$ 125.0	2
3	2010 Residential Incentive Commitment [1]	1.7	-	-	-	-	1.7	3
4	***Total Residential***	***$ 35.7***	***$ 34.0***	***$ 19.0***	***$ 19.0***	***$ 19.0***	***$ 126.7***	4
5	**Non-Residential**							5
6	*Current Contractual Commitments:*							6
7	Production-based Incentives (Existing) [2]	$ 7.6	$ 13.3	$ 17.7	$ 23.2	$ 29.0	$ 90.8	7
8	2008 Distributed Energy RFP	1.1	4.9	7.4	9.6	9.7	32.7	8
9	Innovative Technologies [3]	0.3	2.3	2.3	2.3	2.3	9.5	9
10	Wholesale DE [4]	0.2	0.2	0.4	0.5	0.7	2.0	10
11	ARRA Projects/Incentives	1.2	-	-	-	-	1.2	11
12	*Total Current Commitments*	*$ 10.4*	*$ 20.7*	*$ 27.8*	*$ 35.6*	*$ 41.7*	*$ 136.2*	12
13								13
14	*Program Expansion Commitments:*							14
15	Production-based Incentives (New) [5]	$ 0.3	$ 0.3	$ 0.4	$ 0.4	$ 0.4	$ 1.8	15
16	Up-front Incentives	2.0	2.0	2.0	2.0	2.0	10.0	16
17	Powerful Communities	0.2	0.6	0.9	1.1	1.1	3.9	17
18	EARN	0.5	0.5	0.5	0.5	0.5	2.5	18
19	Customer Self-Directed [6]	-	-	-	-	-	-	19
20	*Total New Commitments*	*$ 3.0*	*$ 3.4*	*$ 3.8*	*$ 4.0*	*$ 4.0*	*$ 18.2*	20
21								21
22	*Schools and Government Buildings:*							22
23	Revenue Requirement	$ 4.4	$ 8.5	$ 3.0	$ 1.3	$ -	$ 17.2	23
24	Incentives	2.7	4.7	5.4	4.6	4.6	22.0	24
25	O/M	0.2	0.2	-	-	-	0.4	25
26	*Total Schools and Government Bldgs*	*$ 7.3*	*$ 13.4*	*$ 8.4*	*$ 5.9*	*$ 4.6*	*39.6*	26
27	***Total Non-Residential***	***$ 20.7***	***$ 37.5***	***$ 40.0***	***$ 45.5***	***$ 50.3***	***$ 194.0***	27
28	***Flagstaff CPP Operation and Maintenance Expenses [7]:***	***$ 0.4***	***$ 0.2***	***$ -***	***$ -***	***$ -***	***$ 0.6***	28
29	**Total Customer Sited Distributed Energy Incentive**	**$ 56.8**	**$ 71.7**	**$ 59.0**	**$ 64.5**	**$ 69.3**	**$ 321.3**	29

Notes:

[1] The resulting incentive commitment from reducing incentives from $3.00/watt to $2.15/watt was $0.9M (Commission Decision No. 71686). Additionally, the resulting incentive commitment from the reduction of incentives from $1.95/watt to $1.75/watt was $0.75M as derived from Commission Decision No. 71913.

[2] Forecast based on existing PBI Commitments up to the $320 million lifetime authorization approved in Commission Decision No. 71459.

[3] Assumption of deployment of resource in mid Nov. 2011. Utilizes funds originally authorized under the DE RFP of $250M lifetime autorization as per Decision No. 71459.

[4] Includes Snowflake White Mountain Power that is split between Renewable Generation and DE. The split is based on the amount of the wholesale component in a given year.

[5] Assumes DE program expansion of $100 million per year lifetime authorization. Estimated annual incentive payments based on an assumed mix of technologies and credit purchase agreement term lengths. Assumptions detailing the cash commitment in each year are described in Exhibit 4C (i).

[6] As discussed in this Implementation Plan, no customers have requested self-direction and therefore no allocation has been made.

[7] Assumes APS general rate case adjudication and allocation to rate base mid-2012.

Exhibit 4A(i): Revised 2011 RES IP REIP budget changes from the July filed 2011 RES IP (in $000,000's)

Line No.		Original 2011	Revised 2011	Change	Line No.
1	**Residential**				1
2	Up-Front Incentives	$ 34.0	$ 34.0	$ -	2
3	2010 Residential Incentive Commitment	0.9	1.7	0.8 [1]	3
4	***Total Residential***	***$ 34.9***	***$ 35.7***	***0.8***	4
5	**Non-Residential**				5
6					6
7	*Current Contractual Commitments:*				7
8	Production-based Incentives (Existing)	$ 15.3	$ 7.6	$ (7.7)	8
9	2008 Distributed Energy RFP	1.1	1.1	-	9
10	Innovative Technologies	0.3	0.3	-	10
11	Wholesale DE	0.2	0.2	-	11
12	ARRA Projects/Incentives	1.2	1.2	-	12
13	*Total Current Commitments*	*$ 18.1*	*$ 10.4*	*$ (7.7)*	13
14					14
15	*Program Expansion Commitments:*				15
16	Production-based Incentives (New)	$ 2.1	$ 0.3	$ (1.8)	16
17	Up-front Incentives	2.0	2.0	$ -	17
18	Powerful Communities	0.4	0.2	$ (0.2)	18
19	EARN	0.5	0.5	$ -	19
20	Customer Self-Directed	-	-	$ -	20
21	*Total New Commitments*	*$ 5.0*	*$ 3.0*	*$ (2.0)*	21
22					22
23	*Schools and Government Buildings:*				23
24	Revenue Requirement	$ 4.4	$ 4.4	$ -	24
25	Incentives	2.7	2.7	-	25
26	O/M	0.2	0.2	-	26
27	*Total Schools and Government Bldgs*	*$ 7.3*	*$ 7.3*	*$ -*	27
28	***Total Non Residential***	***$ 30.4***	***$ 20.7***	***$ (9.7)***	28
29	***Flagstaff CPP O/M Expenses:***	***$ 0.4***	***$ 0.4***	***$ -***	29
30	**Total Customer Sited Distributed Energy Incentive**	**$ 65.7**	**$ 56.8**	**$ (8.9)**	30

[1] Represents the $0.75M incentive reduction ($1.95/watt to $1.75/watt) pursuant to Commission Decision No. 71913.

Exhibit 4B: APS Customer Sited Distributed Energy Programs (MWh)

Line No.		2011	2012	2013	2014	2015	Total	Line No.
	Residential							
1	Current Energy Production[1]	83,293	83,293	83,293	83,293	83,293	416,465	1
2	New Up-Front Incentives [2]	37,060	82,694	109,099	138,836	169,663	537,352	2
3	Community Power Project	902	902	902	902	902	4,510	3
4	***Total Residential***	***121,255***	***166,889***	***193,294***	***223,031***	***253,858***	***958,327***	4
5	*Total Residential DE Target*	*106,741*	*149,433*	*172,697*	*198,504*	*224,634*		5
6	***Non-Residential***							6
7								7
8	*Current Contractual Commitments:*							8
9	Production-based Incentives [3]	87,541	87,541	87,541	87,541	87,541	437,705	9
10	Current Up-Front Incentives	8,608	8,608	8,608	8,608	8,608	43,040	10
11	2008 Distributed Energy RFP	7,751	46,937	72,895	102,689	102,125	332,397	11
12	Wholesale DE [4]	21,348	29,887	34,539	39,701	44,927	170,402	12
13	*Total Current Commitments*	*125,248*	*172,973*	*203,583*	*238,539*	*243,201*	*983,544*	13
14								14
15	*Program Expansion Commitments:*							15
16	Production-based Incentives [5]	38,093	62,660	87,227	118,587	149,947	456,514	16
17	Up-front Incentives	2,011	4,247	6,483	9,114	11,745	33,600	17
18	Powerful Communities [6]	3,000	6,000	9,000	9,000	9,000	36,000	18
19	Customer Self-Directed [7]	-	-	-	-	-	-	19
20	*Total New Commitments*	*43,104*	*72,907*	*102,710*	*136,701*	*170,692*	*526,114*	20
21								21
22	*Schools and Government Buildings:*	6,022	32,118	65,000	65,000	65,000	233,140	22
23	***Total Non-Residential***	***174,374***	***277,998***	***371,293***	***440,240***	***478,893***	***1,742,798***	23
24	*Total Non-Residential DE Target*	*106,740*	*149,433*	*172,696*	*198,503*	*224,633*		24
25								25
26	***Total Customer Sited Distributed Energy (MWh)***	***295,629***	***444,887***	***564,587***	***663,271***	***732,751***	***2,701,125***	26
27	*Total DE Target*	*213,481*	*298,866*	*345,393*	*397,007*	*449,267*		27

Notes:

[1] Estimated total energy resulting from incentives paid with funds through 2010.

[2] Incremental energy required as part of the annual increases in the RES Distributed Energy (DE) requirement.

[3] Existing PBI Commitments up to the $320 million lifetime authorization approved in Commission Decision No. 71459.

[4] This line item is made up of a project (Snowflake White Mountain Power) that is split between Renewable Generation and DE. The split is based on the amount of the wholesale component in a given year.

[5] Distributed energy program expansion of $100 million per year lifetime authorization. Estimated annual incentive payments based on an assumed mix of technologies and credit purchase agreement term lengths.

[6] Powerful Communities is APS's FiT program for wholesale distributed energy.

[7] As discussed in the Implementation Plan, no customers have requested self-direction and therefore no allocation has been made.

Exhibit 4C: PBI Commitments (In $000's)

Line No		2011	2012	2013	2014	2015	Line No
1	*Current Contractual Commitments:*						1
2	Total Cash Commitment for Existing PBIs	$ 7,617	$ 13,272	$ 17,748	$ 23,243	$ 28,957	2
3	DE RFP ($200 million DE RFP lifetime authorization)	$ 1,063	$ 4,910	$ 7,369	$ 9,556	$ 9,705	3
4	Innovative Technologies ($50 million lifetime authorization)	$ 287	$ 2,295	$ 2,295	$ 2,295	$ 2,295	4
5	*Total Cash Commitment for Existing PBI Contracts*	*$ 8,967*	*$ 20,477*	*$ 27,412*	*$ 35,094*	*$ 40,957*	5
6							6
7	*Program Expansion (New Commitments):*						7
8	PBI Annual Commitment (Additional lifetime authorization) [1]	$ 327	$ 327	$ 418	$ 418	$ 418	8
9	Schools and Govt. Building Commitment (up to $24 million lifetime authorization)	$ 1,703	$ 3,777	$ 4,822	$ 4,649	$ 4,634	9
10	*Total Cash Commitment for New PBI Contracts*	*$ 2,030*	*$ 4,104*	*$ 5,240*	*$ 5,067*	*$ 5,052*	10
11							11
12	*Total PBI Contractual Commitments:*						12
13	2006 Contracts	$ -	$ -	$ -	$ -	$ -	13
14	2007 Contracts	$ 93	$ 93	$ 93	$ 93	$ 93	14
15	2008 Contracts	$ 789	$ 789	$ 789	$ 789	$ 789	15
16	2009 Contracts	$ 1,086	$ 1,086	$ 1,086	$ 1,086	$ 1,086	16
17	2010 Contracts	$ 5,649	$ 7,619	$ 7,619	$ 7,619	$ 7,619	17
18	2011 Contracts	$ 327	$ 3,685	$ 4,476	$ 4,476	$ 4,476	18
19	2012 Contracts	$ -	$ 327	$ 3,685	$ 4,476	$ 4,476	19
20	2013 Contracts	$ -	$ -	$ 418	$ 4,704	$ 5,714	20
21	2014 Contracts	$ -	$ -	$ -	$ 418	$ 4,704	21
22	2015 Contracts	$ -	$ -	$ -	$ -	$ 418	22
23	DE RFP	$ 1,063	$ 4,910	$ 7,369	$ 9,556	$ 9,705	23
24	Innovative Technologies	$ 287	$ 2,295	$ 2,295	$ 2,295	$ 2,295	24
25	Schools and Govt. Buildings	$ 1,703	$ 3,777	$ 4,822	$ 4,649	$ 4,634	25
26							26
27	***Annual Cash Commitment for All PBIs***	***$ 10,997***	***$ 24,581***	***$ 32,652***	***$ 40,161***	***$ 46,009***	27
28							28
29	*Cumulative authorized commitment* [2]	*$ 320,000*	*$ 320,000*	*$ 320,000*	*$ 320,000*	*$ 320,000*	29
30	*Cumulative authorization Commitment Expansion* [3,4]	*$ 100,000*	*$ 200,000*	*$ 300,000*	*$ 400,000*	*$ 500,000*	30
31	*Cumulative Authorized DE RFP and Technology Intiatives: Commitment*	*$ 250,000*	*$ 250,000*	*$ 250,000*	*$ 250,000*	*$ 250,000*	31
32	***Cumulative Lifetime Commitment for All PBIs***	***$ 670,000***	***$ 770,000***	***$ 870,000***	***$ 970,000***	***$ 1,070,000***	32

Notes:

[1] The assumption that any newly scheduled PBI commitments for the year will not be actualized until the new deployment schedule as included in this plan. See Exhibit 4C (i) for details. Commitments beyond first year are part of total cash commitments for existing PBI's.

[2] PBI lifetime authorization approved in Commission Decision No. 71459 for $320 million.

[3] Future PBI annual commitments are for the expansion of the Distributed Energy (DE) program.

[4] Future PBI annual commitments for DE program expansion are assumptions based on expected project mix and CPP agreement term lengths.

Exhibit 4C(i): PBI New Contracts Expansion (in $000's)

2010 Expansion

Large Projects

	2010: (Yr 1 of the 2010 expansion)				2011: (Yr 2 of the 2010 expansion)				2012+: (Yr 3+ of the 2010 expansion)			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
NP1	$ -	$ -	$ -	$ 232	$ 464	$ 464	$ 464	$ 464	$ 464	$ 464	$ 464	$ 464
NP2	$ -	$ -	$ -	$ -	$ -	$ 625	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250
Total	$ -	$ -	$ -	$ 232	$ 464	$ 1,089	$ 1,714	$ 1,714	$ 1,714	$ 1,714	$ 1,714	$ 1,714

Medium Projects

	2010: (Yr 1 of the 2010 expansion)				2011: (Yr 2 of the 2010 expansion)				2012+: (Yr 3+ of the 2010 expansion)			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
NP1	$ -	$ -	$ 21	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32
NP2	$ -	$ -	$ -	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32
NP3	$ -	$ -	$ -	$ 11	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32
NP4	$ -	$ -	$ -	$ -	$ 21	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32
NP5	$ -	$ -	$ -	$ -	$ -	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32
NP6	$ -	$ -	$ -	$ -	$ -	$ 11	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32
Total	$ -	$ -	$ 21	$ 75	$ 117	$ 171	$ 192	$ 192	$ 192	$ 192	$ 192	$ 192

Annual budget impact: 2010 expansion of PBI program

	2011	2012	2013	2014	2015
2010 Expansion	$ 5,653	$ 7,624	$ 7,624	$ 7,624	$ 7,624

Annualized 2011-2012 Expansion

Large Projects

	2011/2012 (Yr 1 of each the 2011 and 2012 expansions)				2012/2013 (Yr 2 of each the 2011 and 2012 expansions)				2013+/2014+: Yr 3+ of each the 2011 and 2012 expansions			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
NP1	$ -	$ -	$ -	$ 232	$ 464	$ 464	$ 464	$ 464	$ 464	$ 464	$ 464	$ 464
NP2	$ -	$ -	$ -	$ -	$ -	$ 232	$ 464	$ 464	$ 464	$ 464	$ 464	$ 464
Total	$ -	$ -	$ -	$ 232	$ 464	$ 696	$ 928	$ 928	$ 928	$ 928	$ 928	$ 928

Medium Projects

	2011/2012 (Yr 1 of each the 2011 and 2012 expansions)				2012/2013 (Yr 2 of each the 2011 and 2012 expansions)				2013+/2014+: Yr 3+ of each the 2011 and 2012 expansions			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
NP1	$ -	$ -	$ 21	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32
NP2	$ -	$ -	$ -	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32
NP3	$ -	$ -	$ -	$ 11	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32
NP4	$ -	$ -	$ -	$ -	$ 21	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32
NP5	$ -	$ -	$ -	$ -	$ -	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32
NP6	$ -	$ -	$ -	$ -	$ -	$ 11	$ 32	$ 32	$ 32	$ 32	$ 32	$ 32
Total	$ -	$ -	$ 21	$ 75	$ 117	$ 171	$ 192	$ 192	$ 192	$ 192	$ 192	$ 192

Annual budget impact: 2011 and 2012 expansions of PBI program

	2011	2012	2013	2014	2015
2011 Expansion	$ 328	$ 3,688	$ 4,480	$ 4,480	$ 4,480
2012 Expansion	$ -	$ 328	$ 3,688	$ 4,480	$ 4,480

Annualized 2013-2015 Expansion

Large Projects

	2013/2014/2015 (Yr 1 of each the '13, '14, and '15 expansions)				2014/2015 (Yr 2 of each the '13 and '14 expansions only)				2015+ (Yr 3+ of the '13 expansion only)			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
NP1	$ -	$ -	$ -	$ 296	$ 593	$ 593	$ 593	$ 593	$ 593	$ 593	$ 593	$ 593
NP2	$ -	$ -	$ -	$ -	$ -	$ 296	$ 593	$ 593	$ 593	$ 593	$ 593	$ 593
Total	$ -	$ -	$ -	$ 296	$ 593	$ 889	$ 1,186	$ 1,186	$ 1,186	$ 1,186	$ 1,186	$ 1,186

Medium Projects

	2013/2014/2015 (Yr 1 of each the '13, '14, and '15 expansions)				2014/2015 (Yr 2 of each the '13 and '14 expansions only)				2015+ (Yr 3+ of the '13 expansion only)			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
NP1	$ -	$ -	$ 27	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41
NP2	$ -	$ -	$ -	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41
NP3	$ -	$ -	$ -	$ 14	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41
NP4	$ -	$ -	$ -	$ -	$ 27	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41
NP5	$ -	$ -	$ -	$ -	$ -	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41
NP6	$ -	$ -	$ -	$ -	$ -	$ 14	$ 41	$ 41	$ 41	$ 41	$ 41	$ 41
Total	$ -	$ -	$ 27	$ 96	$ 150	$ 219	$ 246	$ 246	$ 246	$ 246	$ 246	$ 246

Annual budget impact: 2013, 2014, and 2015 expansions of PBI program

	2011	2012	2013	2014	2015
2013 Expansion	$ -	$ -	$ 419	$ 4,715	$ 5,728
2014 Expansion	$ -	$ -	$ -	$ 419	$ 4,715
2015 Expansion	$ -	$ -	$ -	$ -	$ 419

Total PBI annual program expansion budget impacts for all 2011 RES IP years

	2010	2011	2012	2013	2014	2015
2010 Expansion	$ 328	$ 5,653	$ 3,812	$ 3,812	$ 3,812	$ 3,812
2011 Expansion	$ -	$ 328	$ 3,688	$ 2,240	$ 2,240	$ 2,240
2012 Expansion	$ -	$ -	$ 328	$ 3,688	$ 2,240	$ 2,240
2013 Expansion	$ -	$ -	$ -	$ 419	$ 4,715	$ 2,864
2014 Expansion	$ -	$ -	$ -	$ -	$ 419	$ 4,715
2015 Expansion	$ -	$ -	$ -	$ -	$ -	$ 419
Total for expansions	***$ 328***	***$ 5,981***	***$ 7,828***	***$ 10,159***	***$ 13,426***	***$ 16,290***

Exhibit 4D: Flagstaff Community Power Project Budget (in $000,000)

	2010	2011	2012	2013	2014	2015
2008 RES Net Funds Available [1]	$ 5.4	$ 4.0	$ 1.5	$ -	$ -	$ -
Community Power Project Revenue Requirement [2 3]	$ 1.4	$ 2.5	$ 1.6	$ -	$ -	$ -
2008 RES Net Funds Remaining	$ 4.0	$ 1.5	$ -	$ -	$ -	$ -
Community Power Project O/M [3]	**$ -**	**$ 0.4**	**$ 0.2**	**$ -**	**$ -**	**$ -**

Notes:

[1] Represents RES funds collected in 2008 that were unallocated by 12/31/2008 and which were not applied towards APS's 2010 RES adjustor as part of the ACC's review and approval of the APS 2010 Implementation Plan.

[2] Deployment and capital costs.

[3] Assumes APS general rate case adjudication and allocation to rate base mid-2012.

EXHIBIT B

EXHIBIT B

Arizona Public Service Company

Arizona Public Service
Distributed Energy
Administration Plan
October 13, 2010

EXHIBIT B

TABLE OF CONTENTS

EXHIBIT B

TABLE OF CONTENTS

EXHIBIT B

ATTACHED EXHIBITS

Exhibit 1	Distributed Energy Incentives
Exhibit 2	Solar Space Heating Incentive Calculator
Exhibit 3	Standard Project Ranking Calculators
Exhibit 4	PV Off-Angle and Shading Adjustment Table

EXHIBIT B

ARIZONA PUBLIC SERVICE CORPORATION
2010 DISTRIBUTED ENERGY ADMINISTRATION PLAN

1. OVERVIEW

APS is submitting this updated Distributed Energy Administration Plan ("DEAP" or "Plan") to the Arizona Corporation Commission ("Commission" or "ACC") as part of its 2011 Implementation Plan. APS has made only minor adjustments to the DEAP that was approved as part of the Company's 2010 Renewable Eenergy Standard ("RES") Implementation Plan.[1]

The RES requires that a portion of the renewable energy requirements be obtained from distributed energy ("DE"), and that the installed resources result from residential systems and non-residential systems in equal proportions. As part of its RES Implementation Plan, APS describes the installation of DE systems as facilitated by providing customers with financial incentives for the installation of those resources through APS's Renewable Energy Incentive Program ("REIP").

Commission Staff initiated the Uniform Credit Purchase Program ("UCPP") working group in June 2006, and APS participated in all of the working group efforts. The working group made considerable progress towards identifying program workflows, technology sensitive incentive structures and levels, and technology specific requirements and limitations. APS will use the approach and technology requirements developed by the UCPP working group for this Plan. Further, APS has gained considerable experience in program implementation and has used that experience in developing many of the features presented in this Plan.

The Plan and the associated planning models, implementation strategies, and budgeting for the DE program were all designed with specific consideration of the insights provided by the UCPP working group, program implementation and ongoing stakeholder input.

This Plan details the process by which customers will obtain incentives, the requirements associated with the selection, installation, and operation of the DE system, and the measurement of DE performance for compliance reporting and program evaluation. This Plan is designed to provide uniformity and consistency in the administration of APS's DE program.

As part of the RES, the energy generated or displaced by the DE system is applied towards the DE percentage of APS's renewable energy requirement.[2] The unit used to track kilowatt hours ("kWh") derived from renewable resources for purposes of compliance with the RES is the Renewable Energy Credit ("REC").[3] One REC equals one kWh or kWh equivalent (for systems that do not generate electricity).

This Plan will ensure that each customer with eligible technology will be afforded the opportunity to obtain a reservation. The processes described herein are based on technologies and systems with which APS has considerable experience. Technologies, incentive

[1] Decision No. 70654 (December 18, 2008).
[2] A.A.C. R14-2-1805(B).
[3] A.A.C. R14-2-1801(N) – ""Renewable Energy Credit" means the unit created to track kWh derived from an Eligible Renewable Energy Resource or kWh equivalent of Conventional Energy Resources displaced by Distributed Energy Renewable Resources."

configurations, and development models which are newly incorporated may require special consideration until new implementation strategies and methods can be defined.

The following DE technologies are eligible for incentives:

- Biogas Electricity Generator, Biomass Electricity Generator
- Grid-tied and Off-grid Solar Photovoltaic Generators ("PV")
- Biomass Thermal Systems and Biogas Thermal Systems
- Non-residential Solar Pool Heating Systems
- Geothermal Space Heating and Process Heating Systems
- Geothermal Electricity Generator
- Renewable Combined Heat and Power System ("CHP")
- Non-residential Solar Daylighting
- Solar Heating, Ventilation, and Air Conditioning ("Solar HVAC")
- Solar Industrial Process Heating and Cooling
- Solar Space Cooling
- Solar Space Heating
- Solar Water Heating
- Grid-tied and Off-grid Wind Generators of 1 megawatt ("MW") or less
- Fuel Cells that use only renewable fuels
- New Hydropower Generators of 10 MW or less

2. PROJECT CATEGORIES

There are three project categories described by this Plan: Standardized projects, Market-Based projects, and Customer Self-Directed projects.

2.1 Standardized Projects

Unless noted otherwise in this Plan, all information contained herein applies to the administration of standardized projects. By definition, standardized projects follow the procedures and incentives described in this Plan. Incentives available for these projects are described in Exhibit 1. APS anticipates that the vast majority of projects facilitated by this Plan will be standardized projects. The processes described for the standard projects are based on technologies and systems with which APS has considerable experience; technologies and incentive configurations which are newly incorporated may require special consideration until new implementation strategies and methods can be developed.

2.2 Market-Based Projects

Since considerable uncertainty exists with respect to this Plan's ability to meet all expected project variations with standardized incentive offerings, APS believes it is appropriate to fund market-based projects during each program year. This funding will be applied to projects which, for one reason or another, cannot comply with the requirements of the standardized incentive offerings. APS may also solicit market-based projects to meet specific program goals. For example, although the DEAP attempts to identify and accommodate a large range of potential DE project types, financing options, and system host alternatives, specific shortcomings were

identified in the proposed approach. Those shortcomings include concerns regarding increasing cost effectiveness of residential incentives, facilitating installations for multi-tenant residential developments, and challenging DE developers to look at creative mechanisms by which to address the residential DE market.

Projects with staged completion dates, multi-participant or multi-system projects, projects involving more than one technology where an interrelated incentive was not developed, projects requiring new or unique agreement terms, or projects requiring timelines differing from those detailed in this Plan may be eligible for incentives as part of the DEAP. In addition, this Plan does not identify incentives for fuel cells and small hydroelectric facilities; those technologies may also be eligible for incentives as market-based projects.

Market-based projects must achieve similar financial efficiency as the standardized projects detailed in this Plan to be eligible for incentives. Incentives applied for market-based projects must meet the lower of: 1) the maximum allowable incentive for the proposed technology as described in the applicable incentive matrix attached as Exhibit 1, or 2) the average incentive of projects accepted by APS for disbursement for the proposed technology in the previous year. Some qualifying technologies will not have either of the previously described financial efficiency measures. Participants seeking to employ those technologies will work with APS to develop an appropriate incentive.

2.3 Customer Self-Directed

The Customer Self-Directed project funding option is available to eligible customers.[4] The eligible customer must declare that it will self-direct on or before March 31 of the year prior to the year for self-direction. Customer Self-Directed funds can only be requested for prospective years, funds cannot include prior year payments, and funds cannot exceed the level of funding paid by the eligible customer towards the RES in the year prior to the requested allocation.

In order to be eligible for the incentives detailed in this Plan (Exhibit 1), Customer Self-Directed projects must achieve similar financial efficiency as the standardized and market-based projects discussed above. If the eligible customer wishes to apply Customer Self-Directed funds to a DE system or another application not described in the applicable Incentive Matrix, the customer must submit documentation describing the project economics and the requested incentive level. All projects proposed for Customer Self-Directed funding must meet the requirements described in the RES.[5]

Eligible customers who have facilities in the service territories of more than one affected utility can only apply for funds from APS that were collected by APS. The funds obtained from APS can only be used for projects in APS's service territory. Customer Self-Directed projects are also subject to the general requirements set forth in this Plan including installation, operation, REC exchange, and system performance reporting.

For purposes of financing DE projects, funds for Customer Self-Directed projects may be assigned to third parties. Such assignment remains the sole right of the customer.

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[4] A.A.C. R14-2-1801(H) – ""Eligible Customer" means an entity that pays Tariff funds of at least $25,000 annually for any number of related accounts or services within an Affected Utility's service area."

[5] A.A.C. R14-2-1809.

2.4 General

Under some circumstances, such as new residential or non-residential construction, a project may not identify the account holder for the APS billing meter at the project site or the party holding legal right to the property in APS territory where the DE system will be located (referred to in the remainder of this Plan as the "Participant") at project initiation. Regardless of the project design, implementation, or timeline, a Participant must have installed a system that is ready for commissioning and, if grid-tied, have established an account to receive electrical service from APS before the incentive will be paid.

3. INCENTIVE TYPES

The DE Program offers two standard incentive options: Up-front Incentives ("UFI") and Production-Based Incentives ("PBI").

UFIs are those incentives where the Participant receives a one time payment based on the DE system's designed capacity, or a one time payment based on the first-year energy savings provided by the DE system. This type of incentive is applied to smaller non-residential installations and for all standard residential installations. PBIs allow the Participant to collect incentive payments in direct relation to the actual system production. Those payments are received by the Participant over time and are based on an agreed upon contract term.

Incentive levels for both UFIs and PBIs are detailed in the incentive matrices included in Exhibit 1. Each incentive matrix prescribes a decline from the incentive levels detailed for the preceding period of the program. Those declines were discussed in detail as part of Commission Staff's UCPP Working Group and Decision No. 71686[6] and Decision No. 71913[7] In general, the declining incentive levels are designed to reflect several key expectations of the DE markets, which include declining costs of DE technologies, economic efficiency resulting from increased demand on the DE technologies, and increased availability of equipment required in the development of DE systems.

4. PROGRAM REQUIREMENTS

Requirements detailed in this Plan are designed to provide clarity for program Participants and DE developers, to increase the certainty of energy generation and, as a result, production of the RECs for APS's compliance with the RES, and to ultimately drive cost-effectiveness for the DE requirement in the RES.

4.1 General

This program is designed to facilitate Participant installation of DE resources to displace Conventional Energy Resource usage.[8] REIP incentives are designed to defray a portion of the costs associated with the installation of DE resources for the Participant. Systems must be

[6] Issued April 30, 2010.
[7] Issued September 28, 2010.
[8] A.A.C. R14-2-1801(C) – ""Conventional Energy Resource" means an energy resource that is non-renewable in nature, such as natural gas, coal, oil, and uranium, or electricity that is produced with energy resources that are not Renewable Energy Resources."

located on the Participant's property. All systems must be in APS territory. A project developer that builds an eligible DE system that provides a portion of the system's energy output to a non-Participant must provide metering to document the energy produced by the DE system that is received specifically by the program Participant.

Funding is not guaranteed without written confirmation of a reservation from APS. The Participant must follow the reservation procedure outlined in this Plan for APS to set allocated incentive dollars for the specific DE system proposed. If a Participant is receiving electrical service from APS, the Participant must not be delinquent in payments to the Company before an incentive payment can be issued.

Specific funding allocations are used to implement the DE incentive program. Once funds have been exhausted in any one category of this program, a Participant applying for funding within that category may be placed on a waiting list. Funding requests for a project are limited to one application per incentive program per technology; no future request may be applied to that project or the same technology until the original request has expired.

4.1.1 Reservations for New Construction

Reservations can be made for systems that will be installed as part of new residential or non-residential construction. Prior to receipt of a program incentive, a Participant must have installed a system that is ready for commissioning and, if grid-tied, have established an account to receive electrical service from APS before the incentive will be paid.

4.2 Installation and Equipment Specifications

Systems receiving incentives under this program must be installed according to program requirements, including manufacturers' recommendations and generally accepted industry standards. Installation of the system must be completed by an installer meeting the requirements described in Section 5 of this Plan. In addition, the dealer for the system must meet the requirements described in Section 5 of this Plan. Other requirements which are applicable under this Plan include, but are not limited to, the following:

- The project must comply with all applicable local, state, and federal regulations.
- Installations must meet applicable governmental statutes, codes, ordinances, and accepted engineering and installation practices.
- Systems must be permitted with and pass inspection by the authority having jurisdiction ("AHJ") over construction projects in the Participant's locale, or, if the site is not governed by an AHJ, the Participant must provide a certification in lieu of AHJ clearance.
- If the inverter of the DE system is interconnected or in any way connected to the APS grid – a "Grid-Tied System" – the system must meet all applicable APS Interconnection Requirements.
- Domestic Solar Water Heater systems must pass the APS compliance check to ensure that the installation meets the required guidelines.

- APS may request copies of any documents to assure compliance with government, institutional, or DE program requirements that are either explicitly or implicitly described by this Plan.

Distributed energy projects are to be used to serve the Participant's load at the designated point of delivery for APS's electrical service ("service entrance"), or metering point for customers who take service at primary or transmission voltage levels, on adjacent and contiguous sites.[9] It may not be used to serve other service entrances or metering points, even if they are located on the same property and belong to the same customer, unless the service entrances or meters are "totalized" according to APS's Service Schedule 4. If any other requirements described in this Plan conflict with APS approved rate schedules, or government or other institutional requirements as listed above, the conflicting requirements in this Plan may not be imposed.

All major components of the DE system must be new and must not have been previously placed in service in any other location or for any other application. A DE system purchased and interconnected more than 180 days before the date that APS approves the reservation request will not be considered "new" under this Plan. APS may consider exceptions to this timeframe when justified by the Participant in writing. The DE system must also comply with the technology specific criteria detailed below. When technology-specific criteria reference third party standards, the requirements of those standards are fully applicable.

The rapid growth in national and international renewable energy programs is resulting in greater need for the development of standardization in design, performance measurement, system integrity/longevity/maintenance, and installation techniques. New standards are likely to develop in the near future for technologies included in the DE program, and APS reserves the right to incorporate new standards into plan requirements as necessary and appropriate. The following standards or standard development bodies are referenced as part of the technology specific criteria.

- The Active Solar Heating Systems Design Manual developed by the American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. ("ASHRAE") in cooperation with the Solar Energy Industries Association ("SEIA") and the ACES Research and Management Foundation (the "Design Manual").
- Arizona state boiler regulations (A.A.C. R20-5-401 to R20-5-420).
- Select technology specific qualification requirements developed by Go Solar California ("GSC").
- Solar Rating and Certification Corporation ("SRCC"). The SRCC criteria and ratings can be viewed at www.solar-rating.org.
- The Underwriters Laboratory ("UL").

The technology standards are relied upon, in part, to develop a clear understanding of the DE system capacity, energy savings and expected energy production. Incentives offered under this program are based on these system parameters. Therefore, to encourage transparency in program transaction and clarity for Participants, current and accurate technology standards are fundamental to the program's success.

[9] Not separated by a private or public property or right of way.

Some technologies included as DE under the RES tend to be designed as custom applications and vary from installation to installation. In other cases, technologies are generally standardized for all installations. In these situations, installation standards have been published under the end-use application. If no technology specific standard is referenced, at a minimum, to qualify for DE incentives, an Energy Savings and Designed Output ("ES&D") report shall be provided as part of the reservation process.

The ES&D report must include either a testing certification for a substantially similar system prepared by a publicly funded laboratory, or an engineering report stamped by a registered professional engineer. The ES&D report shall provide a description of the system and major components, designed performance, system output, and a brief history of the components used in similar applications. If the system design differs from the recognized industry best practices, as described in the equipment qualifications listed in the Plan for the qualifying technology, the ES&D report must contain a certification that the system design is at least as effective as the specified requirements. For residential new construction, only one ES&D report is required per technology for each floor plan offered in the development for which the incentive is being requested.[10]

Where the equipment qualifications detailed below are required for program participation, the technology specific installation guidance is provided to program participants to convey information on installation and operation practices that are most likely to achieve the DE system's designed output. The requirements described herein are not intended as engineering recommendations, services, or technical advice. Engineering recommendations, design, and performance data will be provided to the Participant by their supplier, installer, or professional advisor. Although installation guidance is not currently mandated for a project to receive an incentive, the guidance does reflect both industry and utility concurrence on those practices that are important for a technology to best achieve the designed output. APS reserves the right to modify equipment qualifications and/or installation guidance if APS becomes aware that such qualifications or guidance results in unsafe conditions, provides inappropriate results for the customer, or is inconsistent with program objectives.

4.2.1 Biomass/Biogas and CHP (Electric and Thermal) and Biomass/Biogas Cooling

Equipment Qualifications

- Systems must include a dedicated performance meter to allow for monitoring of the number of RECs produced.
- A complete ES&D report must be submitted. Biomass system installations involving a regulated boiler or pressure vessel are required to include in the ES&D report confirmation of conformance with all Arizona state boiler regulations, provide a qualifying boiler inspection identification number, and keep all applicable permits in good standing.

[10] Any deviations from the standard floor plan that the ES&D report was originally approved for will require re-submission of an ES&D report.

Installation Guidance

Because of the individual nature of biomass systems, care should be taken to ensure the system complies with all applicable permitting and regulatory requirements, including but not limited to air emission standards and air permit regulations.

4.2.2 Non-residential Solar Daylighting

Equipment Qualifications

Energy savings and designed output for the system will be verified by submitting either a testing certification for a substantially similar system prepared by a publicly funded laboratory or energy savings modeled as approved by APS, or by submitting an engineering report stamped by a registered professional engineer or accredited Association of Energy Engineers ("AEE") Measurement and Verification professional. The report shall include such items as installed cost, energy savings (lighting savings only – no associated HVAC savings), lighting levels (artificial and daylighting), and control scheme methodology (lighting levels, savings, and control mechanism), as well as the inclusion of the following components as part of the overall daylighting system design:

- A roof mounted skylight assembly with a dome having a minimum 70% solar transmittance.
- A reflective light well to the interior ceiling or a minimum 12" below roof deck in open bay areas.
- An interior diffusion lens.
- A minimum of one thermal break/dead air space in the system between the skylight dome and the interior diffuser.
- If artificial lighting systems remain a part of the installation, the system shall include automated lighting control(s) that are programmed to keep electric lights off during daylight hours.
- The system must provide a minimum of 70% of the light output of the artificial lighting system that would otherwise be used for all of the claimed period of energy savings, as measured in foot-candles.

Installation Guidance

All systems should be installed such that the skylight dome is substantially unshaded and have substantially unobstructed exposure to direct sunlight between the hours of 9 a.m. and 3 p.m.

4.2.3 Small Wind Generator

A small wind generator is a system with a nameplate rating of 1 (one) MW or less. The technology criteria described below are intended for small wind generators with a nameplate rating of 100kW or less. Systems larger than 100 kW will be required to submit a detailed package describing site selection, expected energy production, and an engineered system design and installation as part of an ES&D report.

Equipment Qualifications

- Eligible small wind systems must be certified and nameplate rated by the Consumer Energy Center ("CEC") or other qualified third party selected by APS to provide certification and a nameplate rating. A list of certified generators is available at the CEC website (www.consumerenergycenter.org/erprebate/equipment.html). For grid-tied or off-grid wind generators where an inverter is used, APS will use the lesser of the CEC Wind Turbine Power Output Rating or Inverter Power Rating as the basis for calculating the UFI payment.
- Grid-tied inverters used as part of the system shall be listed to UL Standard 1741.
- The tower used in the installation must be designed by a registered professional engineer.
- The wind generator and system must include a five year warranty and an operation and maintenance plan for the full operational life of the system.

In addition to the requirements for small wind generators outlined above, systems with a nameplate rating larger than 100 kW will be required to submit an ES&D Report.

Installation Guidance

Location: A wind turbine hub should be at least 20 feet above any surrounding object and at least 28 feet above the ground within a 250-foot radius. Wind generators should be installed in locations with an elevation at or above the general elevation of the surrounding terrain.

Lot size: The lot size should be one-half acre at a minimum. Municipalities and public facilities, such as schools and libraries, may not need to meet the minimum lot size requirements.

The installed system should be demonstrated to obtain at least a 15% annual capacity factor. The following criteria are readily available calculations which may demonstrate the potential for a 15% capacity factor, but other methods may be used. The installation location should have a demonstrated average annual wind speed of at least 9 MPH as measured at a height of no more than 50 feet above the ground. Average annual wind speed can be demonstrated by wind speed records from an airport, weather station or university within 20 miles of the proposed wind generator location, or by a 50 meter wind power density classification of Class 2 "Marginal" or higher on the "State of Arizona Average Annual Wind Resource" map, dated July 16, 2005 or later, as published by Sustainable Energy Solutions of Northern Arizona University. Northern Arizona University provides detailed wind resource maps as well as other resource services. For more information contact Northern Arizona University at http://wind.nau.edu/maps/.

4.2.4 Photovoltaic Systems

- All systems shall be installed with a horizontal tilt angle between 0 degrees and 60 degrees, and azimuth angle of +/- 110 degrees of due south. Since some installation alternatives are less than ideal for energy production, installation configurations for some systems receiving a UFI will not be eligible for the full incentive applicable to that system. APS will apply the PV off-angle and shading factor adjustment for the PV installation (Section 6.6).

- Photovoltaic modules must be covered by a manufacturer's warranty of at least 20 years.
- Inverters must be covered by a manufacturer's warranty of at least five years. The remaining operational life must be supported by a planned maintenance or equipment replacement schedule.

Grid-Tied Systems Equipment Qualifications

- The minimum PV array size shall be 1,000 W-DC.
- All crystalline silicon photovoltaic modules must be certified by a nationally recognized testing laboratory as meeting the requirements of UL Standard 1703 and IEC 61215. All thin-film modules must be certified by a nationally recognized testing laboratory as meeting the requirements of UL Standard 1703 and IEC 61646.
- All other electrical components used in the installation must be UL listed.
- The inverter must be tested and certified to UL Standard 1741 by a Nationally Recognized Testing Laboratory (NRTL) certified by OSHA to perform the UL 1741 test standard and shall be appropriately Labeled or Listed as defined in the National Electric Code.

Off-Grid Systems Equipment Qualifications

- The minimum, single-system PV array size shall be 200 W-DC.
- All photovoltaic modules must be certified by a nationally recognized testing laboratory as meeting the requirements of UL Standard 1703.
- All other electrical components used in the installation must be UL listed.
- If the installation is an AC application, the inverter must be listed to UL Standard 1741.
- "As-built" drawings shall be submitted to APS upon completion of the project and shall include a plant location map.
- The inverter must be tested and certified to UL Standard 1741 by a Nationally Recognized Testing Laboratory (NRTL) certified by OSHA to perform the UL 1741 test standard and shall be appropriately Labeled or Listed as defined in the National Electric Code.

4.2.5 Solar Space Cooling

Equipment Qualifications

- A complete ES&D Report must be submitted, certifying the following criteria:
  - The minimum cooling capacity of the system will be 120,000 BTU per hour (10 tons).
  - Solar collector panels used will have a SRCC OG-100 rating or laboratory documentation showing the panel energy output under controlled and replicable test conditions.

Installation Guidance

- The horizontal tilt angle of the collector panels should be between 15 and 60 degrees and the panel orientation should be between +/- 45 degrees of south.
- All systems should be installed such that the energy collection system is substantially unshaded, and systems should have substantially unobstructed exposure to direct sunlight between the hours of 9 a.m. and 3 p.m.

4.2.6 Non-residential Solar Water Heating and Space Heating

Equipment Qualifications

A complete ES&D Report must be submitted that includes certification that solar collector panels used shall have a SRCC OG-100 certification or laboratory documentation showing the panel energy output under controlled and replicable test conditions.

Installation Guidance

- The horizontal tilt angle of the collector panels should be between 20 and 60 degrees and the panel orientation should be between +/- 45 degrees of south.
- All systems should be installed such that the energy collection system is substantially unshaded, and systems should have substantially unobstructed exposure to direct sunlight between the hours of 9 am and 3 pm.
- Active, open-loop systems are not eligible for incentives except for active, open-loop systems that have a proven technology or design that limits scaling and internal corrosion of system piping, and includes appropriate automatic methods for freeze protection. Details disclosing conformance with this exception shall be submitted as part of the ES&D report or manufacturer's verification documentation.

4.2.7 Small Domestic Solar Water Heating

Equipment Qualifications

- Domestic Solar Water Heating systems must be rated and certified by the SRCC and OG-300 system program.
- The 'high' temperature limit of water entering the home shall be set at a maximum of 130 degrees Fahrenheit. This can be accompanied by installing a temperature control valve or "tempering valve" on the downstream side fo the backup water heater.
- Contractors must provide a minimum five year equipment warranty as provided by the system manufacturer, including a minimum warranty period of two years for repair/replacement service to the Participant. The remaining operational life must be supported by a planned maintenance or equipment replacement schedule.
- Systems shall be selected and sized according to the geographic location and hot water needs of the specific application.

- Active, open-loop systems are not eligible for incentives except for active, open-loop systems that have a proven technology or design that limits scaling and internal corrosion of system piping, and includes appropriate automatic methods for freeze protection. Details disclosing conformance with this exception shall be submitted as part of the manufacturer's verification documentation.
- Integrated collector storage ("ICS") systems shall have a minimum collector piping wall thickness of 0.058 inches. Details disclosing conformance with this requirement shall be submitted as part of the manufacturer's verification documentation.

Installation Guidance

- All systems must be installed as meeting the SRCC OG-300 installation guidance.
- All systems should be installed such that the energy collection system is unshaded, and systems should have substantially unobstructed exposure to direct sunlight between the hours of 9 am and 3 pm.

4.2.8 Small Domestic Solar Space Heating

Equipment Qualifications

- The system must be supported by a five year equipment warranty including a minimum warranty period of two years for repair/replacement service to the Participant. The remaining operational life must be supported by a planned maintenance or equipment replacement schedule.
- A report must be submitted verifying that:
  - The system will be incented based on a Solar Space Heating Incentive Calculation Procedure. The input sheet and description calculation procedure is attached as Exhibit 2 (APS will make the calculation procedure available upon request).
  - The system will utilize OG-100 certified collectors.
- The use of a solar space heating incentive calculation does not suggest or imply that a full energy audit is required to qualify for the solar space heating incentive. The intent of the calculation is for industry professionals to utilize the calculation tool to aid in facilitating sound system design.

Installation Guidance

- The system should be installed with a horizontal tilt angle between 15 degrees and 60 degrees, and an azimuth angle of +/- 60 degrees of due south. It is recommended that collectors be positioned for optimum winter heating conditions at a minimum tilt angle of 45 degrees above horizontal, or as recommended by the manufacturer for the specific collector type and geographic location of installation.

- All systems should be installed such that the energy collection system is unshaded, and systems should have substantially unobstructed exposure to direct sunlight between the hours of 9 a.m. and 3 p.m.
- Heat exchange fluid in glycol systems should be tested, flushed, and refilled with new fluid as necessary, every five years, or per the manufacturer's recommendations.
- It is recommended that the anode rod be checked and replaced per manufacturer's recommendations, but no less frequently than every five years.
- It is recommended that the system design include a timer, switch, or other control device on the backup element of the storage tank.
- The collectors and storage tank should be in close proximity to the backup system and house distribution system to avoid excessive pressure or temperature losses.
- It is recommended that, in areas where water quality problems are reported to have reduced expected life of a solar water heater, a water quality test is performed for each residence to screen for materials which, through interaction with the materials of the proposed system, may reduce the expected operational life of the system components. The Participant should consider contacting the manufacturer to determine if warranty or operational life will be affected.
- In areas subject to snow accumulation, sufficient clearance should be provided to allow a 12" snowfall to be shed from a solar collector without shadowing any part of the collector.
- Each system should have an operation and maintenance manual at the Participant's site, and each Participant must complete an initial start up and operation training review with the contractor at the time of system start up.

4.2.9 Residential Solar Thermal (Heating and Domestic Hot Water)

Residential Solar Thermal is a single system design that produces both space heating and water heating for residential use. An ES&D Report must be submitted that includes certification that solar collector panels used in the installation shall have a SRCC OG-100 certification or laboratory documentation showing the panel energy output under controlled and replicable test conditions. Report details should be broken out on a month-by-month basis, and should include the following: total solar production based on installation and location, total building BTU requirements, BTU space heating requirements, domestic hot water BTU requirements, and any other hot water BTU requirements.

Equipment Qualifications

- The system will utilize OG-100 certified collectors.
- The system must be supported by a five year equipment warranty including a minimum warranty period of two years for repair/replacement service to the Participant. The remaining operational life must be supported by a planned maintenance or equipment replacement schedule.

Installation Guidance

- The system should be installed with a horizontal tilt angle between 20 degrees and 60 degrees, and an azimuth angle of +/- 60 degrees of due south. It is recommended that collectors be positioned for optimum winter heating conditions at a minimum tilt angle of 45 degrees above horizontal, or as recommended by the manufacturer for the specific collector type and geographic location of installation.
- All systems should be installed such that the energy collection system is substantially unshaded, and systems should have substantially unobstructed exposure to direct sunlight between the hours of 9 a.m. and 3 p.m.
- Heat exchange fluid in glycol systems should be tested and flushed and refilled with new fluid as necessary, every five years, or per the manufacturer's recommendations.
- It is recommended that the anode rod be checked and replaced per manufacturer's recommendations, but no less frequently than every five years.
- It is recommended that the system design include a timer, switch, or other control device on the backup element of the storage tank.The collectors and storage tank should be in close proximity to the backup system and house distribution system to avoid excessive pressure or temperature losses.It is recommended that, in areas where water quality problems are reported to have reduced expected life of a solar water heater, a water quality test is performed for each residence to screen for materials which, through interaction with the materials of the proposed system, may reduce the expected operational life of the system components. The Participant should consider contacting the manufacturer to determine if warranty or operational life will be affected.
- Active, open-loop systems are not eligible for incentives except for active, open-loop systems that have a proven technology or design that limits scaling and internal corrosion of system piping, and includes appropriate automatic methods for freeze protection. Details disclosing conformance with this exception shall be submitted as part of the manufacturer's verification documentation.In areas subject to snow accumulation, sufficient clearance should be provided to allow a 12" snowfall to be shed from a solar collector without shadowing any part of the collector.
- Each system should have an operation and maintenance manual at the Participant's site, and each Participant must complete an initial start up and operation training review with the contractor at the time of system start up.

4.2.10 Non-Residential Pool Heating

Equipment Qualifications

- A complete ES&D Report must be submitted.

4.2.11 Geothermal Space/Process Heating & Cooling

Equipment Qualifications

- A complete ES&D report must be submitted by the contractor and approved by APS prior to the installation.
- Equipment must be UL approved and meet the applicable Air Conditioning and Refrigeration Institute (ARI) Performance Certifications.
- Equipment must meet the following minimum efficiency requirements:
  - Closed Loop: 14.1 EER 3.3 COP
  - Open Loop: 16.2 EER 3.6 COP

Installation Guidance

- Ground loop systems must be installed by a contractor who holds a current International Ground Source Heat Pump Association (IGSHPA) certification.
- Wells must be permitted and drilled by a State of Arizona certified contractor.
- Contractors must hold a valid National Balancing Institute (NBI) or Building Performance Institute (BPI) certification.
- All systems should be designed (sized) and installed in accordance to the Air Conditioning Contractors of America (ACCA) Quality Installation Specifications and Standards.
- The operational life must be supported by a planned maintenance or equipment replacement schedule.

4.3 Inspections

DE systems must be permitted with and inspected by the AHJ over construction projects in the Participant's locale or the Participant must provide to APS a Letter in Lieu of Electrical Clearance or other waiver acceptable to APS.[11] Any inspections conducted by APS are in addition to, not in lieu of, these building and construction related inspections. Access to the system shall be made available to APS during normal business hours for the purpose of conducting the applicable APS inspection. APS will at times be inspecting system components on the Participant side of the meter.

All grid-tied systems will be inspected by APS to ensure the system is connected to the grid in conformance with APS's Interconnection Requirements.[12] Under no circumstances is any grid-tied system to be installed in parallel or otherwise connected with the APS system until such time that the system has been inspected by APS and written authorization is received from APS. APS will normally conduct the interconnection inspection only after the system has been inspected by the AHJ.

Select residential solar water heating systems will be required to pass program compliance checks. The systems will be examined to ensure the system is installed safely and according to the SRCC OG-300 installation guidelines, including state and local plumbing and mechanical

[11] The Letter in Lieu of Electrical Clearance is available at aps.com.
[12] APS's Interconnection Requirements are available at aps.com .

codes. Payment of incentive funding is contingent on successful passage of the APS compliance check; APS compliance checks for systems installed by active members of the APS Qualified Solar Installer ("QSI") program will be waived after successful passage of the required amount of inspections, upon which incentive funding will be released to the Participant without an APS compliance check.[13] APS will normally conduct the compliance check only after the system has been inspected by the AHJ.

APS will select a subset of DE program reservations for an APS DE Program conformance inspection. The selected systems will be required to pass the conformance inspection before the Participant is eligible to receive an incentive payment. The purpose of the conformance inspection is to ensure that the system has been installed in accordance with the terms, conditions, and specifications provided on the Reservation Application and Credit Purchase Agreement and with the requirements outlined in this DEAP. The conformance inspections for photovoltaic systems will normally also include verification of the PV off-angle and shading factor reported for the PV installation in the reservation.

APS will randomly select some DE Program installations whose systems will receive a maintenance inspection to field verify that the system is being operated in compliance with the terms and conditions agreed to in the Reservation Request and Credit Purchase Agreement and the requirements outlined in this Plan. The purpose of the maintenance inspection is to gather information that will assist APS in its evaluation of the effectiveness of the DEAP.

4.4 Metering and Meter Reading

All DE systems must include a system dedicated kWh meter, or meters, which allows for measurement of system energy production (the "Performance Meter"). The Performance Meter must be installed in compliance with the APS Electric Service Requirements Manual (ESRM) Section 300, which is available on APS's website, and must be installed so as to record the renewable energy A/C power output produced by the inverter or generator. If Performance Meter output data is used to calculate a PBI, other metering arrangements may be required depending on the configuration of the system. These arrangements may include wireless or telephone line telemetry at the customer's expense. The Performance Meters are in addition to the APS billing meter and must be appropriately identified as the "Photovoltaic, Wind, etc., Performance Meter." The Performance Meter must be calibrated to meet industry standards and must provide either direct kWh readings or readings which can readily be converted to kWh using standard engineering conversions. The Performance Meter is required to be located adjacent to the APS billing meter unless otherwise approved by APS.

In those circumstances where the DE system is a hybrid system (i.e., uses more than one technology), APS requires that a Performance Meter be in place to measure the kWh produced from each renewable resource so that the information can be accurately recorded.

APS may, at its discretion, install APS-owned Performance Meters for system monitoring purposes. A Performance Meter owned and read by APS may facilitate APS's ability to gather performance data and to report system performance to the Participant on their standard APS bill.

[13] The quantity of inspections is determined by the APS QSI program requirements.

System generation (REC production) must be reported annually to APS for UFI Participants, unless other arrangements have been approved by APS. Participants utilizing PBIs will be provided with monthly system production on a quarterly basis. The reported production is to be verified by the participant or authorized representative and returned to APS along with the REC documentation. Payment for system production will be made on a quarterly basis following APS's receipt of the REC documentation and production verification.

4.5 REC Ownership

As part of APS's payment of a UFI, the utility will be given complete and irrevocable ownership of all RECs expected from system production for 20 years, the expected or planned effective life of the DE system. APS's payment of a PBI will assure APS complete and irrevocable ownership of the REC for the full duration of the PBI agreement. RECs provided to APS as a result of a DE system installation will be applied towards APS' RES targets.

4.6 System Maintenance

To ensure a system benefit received by the REC purchase, APS requires that the Participant maintain and operate the DE system in APS territory for the specific duration detailed in the Reservation Request and Credit Purchase Agreement. If the DE system either needs to be removed from the Participant property or if it is no longer operational, the Participant must notify APS within five business days after the DE system is either removed from the property or is no longer operational. Short (those lasting less than one month) system "outages" as part of system repair or planned maintenance are anticipated as part of this program and need not be reported in accordance with the above requirement.

5. INSTALLER AND DEALER QUALIFICATIONS

The installer must possess a valid license on file with the Arizona Registrar of Contractors ("AZROC"), with a license classification appropriate for the technology being installed, or the installer must identify use of a contractor holding an appropriate license on file with the AZROC for the technology being installed. With APS's implementation of its Qualified Solar Installer program, it is APS's intention to rely on training and certification to ensure the consistent quality of installations at customer sites. With the maturation of our Qualified Solar Installer program over time, APS will ultimately require a customer to use an installer qualified under this program in order to be eligible for renewable energy incentives.

If the equipment dealer is a party to the reservation request, the dealer must provide proof of possession of a business license that is in good standing with the appropriate agency(ies) and must also provide proof of liability insurance if the business license provided does not require liability insurance.

Solar providers are responsible for providing written notification to APS of mergers or changes to the name of the business.

EXHIBIT B

6. INCENTIVES

6.1 Non-Residential Funding Allocation

As described in APS's RES Implementation Plan, the annual funding level for DE incentives was established primarily based on previous year program installations and reservations with consideration for estimates of anticipated consumer demand for the various technologies, project sales and development time frames, variations in the levels of technology maturity, and availability of equipment for installation. The proposed DE incentive budget and the incentive budget allocation provides for exceeding the DE target for the full five years described in the current Implementation Plan.

The incentive matrices in Exhibit 1 describe incentive reductions every two years of the program. Those planned reductions are designed to reflect the anticipation that DE technologies will decline in cost as market penetration and product availability increase. In the event that funds collected for use in the DE incentive program are not fully subscribed in a program year, those funds will be applied towards the next program year and allocated to achieve the required energy outcome between residential and non-residential projects.

Non-residential funds are made available for project reservations on the first working day after January 1st of each program year. Funds for residential projects will be made available for reservation beginning October 2, 2010 (and on October 1 of each subsequent year for the following year's Implementation Plan) on a first-come, first-reserved basis; payments will not be made until after the first working day after January 1st of each program year.

Funds offered under APS's expanded non-residential program will be divided into four categories; Large Projects (PBI), Medium Projects (PBI), Small Projects (UFI), and qualifying projects under the Schools and Government Program (PBI).

For purposes of APS's non-residential program, a Large Project is defined as any electricity producing project whose inverter(s) or generator(s) is rated greater than 200 kWac or any project whose lifetime incentive commitment is greater than $2.5 million dollars. Incentives will be capped for electricity producing systems at a capacity size of 2,000 kWac per interconnection point; actual system size is not limited under this program, although all other interconnection and program requirements remain applicable.

A Medium Project is defined as any electricity producing project whose inverter(s) or generator(s) is rated 200 kWac or less, or any project whose lifetime incentive commitment is less than $2.5 million dollars, and does not qualify for an up-front incentive.

A Small Project is defined as any project that qualifies for an up-front incentive or the system size is less than 30 kWac.

The Schools and Government Program is designed to assist publicly funded (K-12) schools and state/local governmental facilities. Projects are open to solar daylighting, solar electric, solar space heating/water heating and solar space cooling technologies. For facilities less than 75,000 square feet, projects are limited to 350 kWac per interconnected meter for generating technologies; facilities greater than 75,000 square feet are limited to 550 kWac per

interconnected meter. Solar daylighting incentives are capped at $150,000 per year per customer. Projects larger than the above mentioned limits will be required to participate in the standard program as a Large Project.

Large Project funding described in APS's Implementation Plan will be divided equally 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). Small and Medium Project funding as described in APS's Implementation Plan will be allocated equally over six nomination periods (January-February, March-April, May-June, July-August, September-October, and November-December) with each equaling two full calendar months. The Schools and Government Program funding will be allocated over six nomination periods (January-February, March-April, May-June, July-August, September-October, and November-December). All nomination periods close at 5:00 pm Arizona time on the last business day of the applicable month.

Non-residential reservation requests are submitted as a bid expressed in $/REC (or $/kWh) and, if a PBI, the preferred REC and payment terms. Each bid is evaluated by a project ranking "calculator." A sample ranking calculator was prepared as part of the Commission Staff UCPP working group; APS's ranking calculator is designed to function in substantially the same manner as the sample calculator. The input sheet and description for the sample calculator is attached as Exhibit 3. APS's ranking calculator is publicly available on APS's website.

In the event that budgeted funds available for a nomination period exceed the total amount of incentives requested, all qualifying applications will be approved. Remaining budgeted funds for that nomination period will be equally divided among the remaining nomination periods within that category. If an application is approved, APS will send a reservation confirmation to the applicant.

In the event that the demand for non-residential incentives exceeds the budgeted funds available for a nomination period in any one project category, APS will use the ranking calculator to select the projects with the highest ranking, matching requested incentives with the available budgeted funds. If the application is denied because funding is not available, APS will send notification to the applicant. In the event that requests are denied due to funding, ranking values will be posted, along with their approval status. No specific project information (customer/contractor names, locations or non-energy/cost details) will be listed to ensure that confidentiality is maintained.

6.2 Residential Funding Allocation

Residential grid-tied PV incentives will be allocated into four Funding Cycles. Available residential grid-tied PV incentives in each funding cycle will be equivalent to the greater of one quarter of the total available residential grid-tied PV incentives or 600 reservations. The fourth funding cycle will not be limited by the number of applications and will utilize remaining residential grid-tied PV funds available.

The Funding Cycles are defined below. For the purposes of this Plan, Funding Cycle One of each Plan year occurs during the final quarter of the calendar year preceding the current Plan.

Funding Cycle 1 - October 1[14] through December 31
Funding Cycle 2 - January 1 through March 31
Funding Cycle 3 - April 1 through June 30
Funding Cycle 4 - July 1 through September 31

Throughout the Plan year, applications will be eligible for a "rapid reservation." The rapid reservation utilizes a reduced incentive amount designed to continue to challenge the PV market towards cost reductions, and is designed to reward customers and installers with lower cost customer installations and to allow for expedited installations. All "rapid reservation" incentive requests and their associated budgets will be applied against Funding Cycle 4 of the applicable year. Rapid Reservations will not count against the 600 reservation cap in Funding Cycles 1 through 3. APS will confirm all grid-tied PV applications that request the rapid reservation incentive amount. APS will continue to accept all other PV applications up to the Funding Cycle budget and will confirm these applications based on the order in which they were received.

Any unfunded application that is not reserved upon submission will be wait-listed for approval in a subsequent funding cycle, based upon funding availability. All eligible non-PV DE technologies will be reserved on a first-come, first-reserved basis, contingent upon funding availability.

6.3 Incentive Principles

As part of this Plan, residential systems are eligible only for UFIs. Non-residential systems may receive either a UFI or a PBI, depending on the technology and the installation size. Non-residential UFIs were developed for technologies where the average project is less than 30 kWac or the average project size results in a total incentive less than or equal to $50,000. PBIs were developed for technologies where the average project size results in an incentive totaling more than $50,000, based on the net-present value of the total of incentive payments or the otherwise applicable UFI, and for systems greater than 30 kWac.

Incentive funds can be applied to a "project," which is the sum of all DE systems installed at a Participant site that are eligible for program incentives in a single calendar year. A Participant site can obtain a UFI for multiple projects, under separate reservations, up to $50,000 at each Participant site per calendar year.

Residential UFIs were developed to encourage flexibility and technology diversity within that market segment. Residential UFIs are available for PV systems up to 30 kWdc. Residential non-PV technologies are eligible for UFI incentives up to a total of $50,000 for each installation. Larger residential DE systems may be installed by the customer consistent with other programs and APS limitations, but will not be eligible for incentives for the fraction above the UFI incentive limit.

[14] As part of the 2011 RES Implementation Plan, Funding Cycle 1 was scheduled to begin on October 2, 2010.

6.3.1 Reservations for New Residential Construction

Incorporation of DE systems into the development of new residential construction requires the reservation of funds in a manner other than that described in the standard UFI process. Approved reservations for incentive funds for new construction will conform to the following provisions:

- Funds may be reserved for up to twelve months for a single reservation.
- All funds within a reservation must be allocated to a specific lot within the development or sub-division.
- The reservation must specifically indicate the development schedule for the identified lots and the year when the incentive payment is expected. Once a project is initiated, funding "adjustments" cannot exceed 10 percent of the requested annual funding.
- Funds reserved but uncollected as completed projects in one year will be forfeited.
- Once funds have been reserved for a lot, no future reservation may be applied to that lot or the same technology until the original reservation has expired.

6.4 Standardized Incentives

Incentives levels provided as part of this Plan were collaboratively developed, and, in part, were created to help or expand incipient markets for DE, taking into account each technology's specific market conditions, and placing a portion of the cost on the Participant. Incentive levels are provided in accordance with the applicable year project incentive matrix included as Exhibit 1.

6.5 Incentive Caps

DE incentives can be applied to systems designed to serve only the typical load of the Participant. Typical load is defined as the total annual kWhs used by that customer at the metered point of interconnection. The assessment of that typical load does not preclude the periodic production of electricity in excess of the Participant's demand. Under certain circumstances it is understood that select Participant installations will be designed to serve loads greater than that of the Participant. Under those circumstances, the incentive will be applied only to the fraction of the generation that is used to serve the typical Participant load; incentives will not be paid for any production that exceeds typical Participant load. The DE incentives were developed separate and apart from other utility program incentives, such as those for demand side management projects. Systems are not eligible to receive DE incentives if incentives from other APS programs are received.

Dealer's and manufacturer's incentives are capped at 50% of the system cost basis when installing equipment on their homes or businesses. Dealers cannot include retail installation costs in the cost basis calculation. Dealers must provide verification for the cost paid for each system component. Manufacturers cannot include their own technology in the cost basis.

6.6 De-Rating of Photovoltaic System Incentives

The productivity of photovoltaic systems is sensitive to the specifics of the installation method and location. In particular, these systems are impacted by shading and photovoltaic panel tilt angle and azimuth. This variability in system performance is taken into account when adjusting

the available UFI level and determining the actual amount of incentive received by the Participant. Incentives for photovoltaic systems will be adjusted in accordance with the PV Off-Angle and Shading Adjustment Table attached as Exhibit 4.

6.7 Payment of PBIs

Participants receiving PBI funds will be provided with monthly system production on a quarterly basis. The reported production is to be verified by the participant or authorized representative and returned to APS along with the Renewable Energy Credit documentation. Payment for system production will be made on a quarterly basis following APS's receipt of the REC documentation and production verification.

6.8 Taxes

Program participants are solely responsible for the payment of any and all taxes applicable to the DE resource and/or the incentive payment(s).

6.9 Assignment of Payment

Systems may be owned by third parties, and APS may make payments to such third parties upon the written consent of the Participant. Participants may assign payments to an installer, dealer, or developer. APS will consider assignment to other parties upon request by the Participant.

6.10 Default

If the Participant fails to maintain and operate the DE system in APS territory for the period detailed in the Credit Purchase Agreement, which is never less than ten (10) years, the Participant shall be considered in default of the terms and conditions of the incentive payment agreement. Participants in default will be subject to damages and must reimburse the Program for all or a portion of the incentive(s) received to that point, subject to the terms of the Credit Purchase Agreement. The default terms in the Credit Purchase Agreement will vary slightly depending on whether the incentive is a UFI or PBI, but are designed to reimburse the Program for environmental credits that were paid and/or accounted for through the full incentive term, but not received. This is especially important for UFIs where APS is entitled to 20 years of credits through the payment of one up-front incentive.

7. RESERVATION PROCESS OVERVIEW

Participant submits application to APS: The Participant must submit a signed application supplied by APS. APS will log the applications in the order received.

Participant receives reservation confirmation: After reviewing the application, APS will, based on funding availability, issue a reservation. APS will send a written confirmation to the applicant.

If the application is deficient in meeting one or more of the program requirements, APS will inform the Participant of the nature of the deficiency and will allow the Participant to correct the

deficiency. If the application is denied because funding is not available, the request will be placed on a waiting list and APS will notify the applicant.

Participant must submit a W-9: APS will provide Participant with an on-line W-9 form. The W-9 must be completed and submitted back to APS prior to the final incentive payment. The completed W-9 will allow APS to issue the Participant an IRS Form 1099 to assist the Participant in the preparation of income tax returns. Recent IRS guidance indicates APS incentive payments are taxable income to the recipient.

Credit Purchase Agreement: Non-residential participants must execute a Credit Purchase Agreement within 45 days of the date of the reservation confirmation from APS. At such time, the customer must also provide a complete executed contract between themselves and the developer/contractor for the installation of the proposed renewable technology.

Proof of Advancement: The Participant may be required to submit Proof of Advancement (written progress report) to APS within 60 days of reservation approval for UFIs, and within 120 days of reservation approval for PBIs to retain the reservation. The purpose of the Proof of Advancement requirement is to ensure that reservation dollars are allocated to projects that will advance to the installation stage.

Interconnection Application: The interconnection application and site plan diagram is submitted to APS. APS will provide preliminary approval that the system meets interconnection standards (grid-tied). Final approval will not be issued until the interconnection inspection is completed.

Participant Proceeds with Installation: The Participant must obtain all required permits, then proceed with system installation.

Grid-tied systems: Systems are required to pass an interconnection inspection that will be conducted by APS before the system can be authorized to operate in parallel to the APS grid. APS will conduct the interconnection inspection only after the system has been inspected by the AHJ or if APS has received a Letter in Lieu of Electrical Inspection. If the DE system passes the interconnection inspection, APS will provide the Participant with a written document that provides "Permission to Operate." If the DE system fails the interconnection inspection, the reservation can remain active, as long as the deficiency is remedied within the defined reservation timeframe.

Commissioning Packet: Participant must submit a signed Commissioning Packet supplied by APS. At a minimum, the Commissioning Packet will include certification from the installer/dealer and Participant that the system installed was consistent with the terms and conditions of the Reservation Packet and this Plan. If a material change was made between the time APS approved the reservation and the date APS received the Commissioning Packet, the Participant must complete an Amended Application. If the change increases the incentive amount the system is eligible to receive, APS will confirm that DE program funding is available. If funding is not available, APS will only provide an incentive in the amount requested in the Reservation Packet. Changes in the project plan that result in increased system output will only result in additional incentives beyond the original reservation amount if RES funding is sufficient/available.

If the system has been selected to receive a conformance inspection, as detailed in Section 4.3, the incentive payment will not be processed until after the system has passed the conformance inspection.

If the system is a photovoltaic system that has been selected to receive a conformance inspection, the incentive may be adjusted in accordance with the provisions set forth in Section 6.6 of this Plan.

APS sends incentive payment: For UFIs, APS will send the incentive payment or initiate incentive payments in accordance with the instructions provided by the Participant in the signed Commissioning Packet. For participants under a PBI, the payment process in Section 6.7 above will be followed.

8. EXTENSIONS AND CANCELLATION POLICY

A Participant will receive a written notice of reservation expiration if all program requirements have not been met within the reservation timeframe. The reservation timeframe for UFIs is 180 days from the reservation confirmation date to final completion and/or interconnection. For PBIs, the reservation timeframe is 365 days from the reservation confirmation to completion and/or interconnection. Upon APS's sole discretion, the Company may grant an extension for up to 90 days following timely receipt of a Participant's request for extension. All extension requests must be received before the assigned project completion date. Requests must document justification for the extension and must detail one of the following: 1) delays caused by APS or affiliated parties, 2) outstanding AHJ requirements, or 3) documented limitations on available material resources for the project where material orders occurred within the reservation timeframe. APS may request additional support for the Proof of Advancement to be considered the extension. The Company may approve written extension requests beyond 90 days only under extenuating circumstances.

9. ENERGY REPORTING PROGRAM MONITORING

APS will track progress toward program goals on an ongoing basis to monitor program effectiveness and sufficiency of the funding allocation. APS will compile data received from conducting the conformance and maintenance inspections, meter readings, and analyze trends in Participant participation and technology installation. The data will be evaluated on an ongoing basis to better understand critical factors impacting the incentive structures and the overall effectiveness of this Plan. If the DEAP need to be adjusted to reflect new information, changing market conditions, incorrect initial assumptions, or technological innovations, APS will bring those issues to the attention of the Commission in a timely manner.

APS will report on the productivity of all distributed resources on an annual basis. For PBI systems, APS will report on the actual metered production of each system as reported by the Participant and confirmed by APS. For systems receiving a UFI, APS will report on the total installed capacity and projected productivity. APS will develop a method by which to calibrate the reported productivity and shall monitor that method for long-term accuracy.

On occasion, a DE system which received a UFI will be removed from the Participant property prior to the end of its agreement term without the permission of the utility. Also, on occasion, a

DE system, which had received a UFI, will be in need of repair which the Participant does not plan to complete. If either situation occurs, and if despite reasonable efforts on the part of the APS the Participant will not reinstall or repair the DE system, then APS will continue to reflect in its annual compliance reporting the annual historic energy production for the system until the agreement term for the system has been completed.

In addition, APS will monitor that specific Participant and property to ensure that an additional incentive is not provided for any new DE system on that property until the operational life of the incented system has been completed. APS will attempt to monitor the number of missing and unrepaired DE systems and shall summarize its observations in its annual compliance report.

Exhibit 1

Distributed Energy Incentives

DISTRIBUTED ENERGY ADMINISTRATION PLAN CONFORMING PROJECT UP-FRONT INCENTIVES

UFI Matrix

	Residential or Non-Residential	Resource Type	2011	2012	2013	2014	2015
Residential(1)							
SMALL WIND Residential (grid-tied) (11)	Residential	Wind	$2.25/Watt	$2.25/Watt	$1.91/Watt	$1.91/Watt	$1.62/Watt
SMALL WIND Residential (off-grid) (11)	Residential	Wind	$1.80/Watt	$1.80/Watt	$1.53/Watt	$1.53/Watt	$1.30/Watt
PV RESIDENTIAL (grid-tied) (2,11)	Residential	Solar PV			See Table 1 A		
PV RESIDENTIAL (off-grid) (2,11)	Residential	Solar PV	$1.50/Watt	$1.00/Watt	$0.50/Watt	$0.50/Watt	$0.50/Watt
SOLAR SPACE/WATER HEATING (3,4,5,11)	Residential	Solar - All Other	$0.50/kWh	$0.50/kWh	$0.42/kWh	$0.42/kWh	$0.36/kWh
Home Builder (1,11)							
PV RESIDENTIAL (grid-tied) (2)	Residential	Solar PV	$1.95/Watt	$1.45/Watt	$1.20/Watt	$1.05/Watt	$0.95/Watt
Non-Residential (6)							
NON-RESIDENTIAL DAYLIGHTING (4)	Non-Residential	Other	$0.18/kWh	$0.18/kWh	$0.15/kWh	$0.15/kWh	$0.13/kWh
GEOTHERMAL - (electric)	Non-Residential	Geothermal	$0.45/Watt	$0.45/Watt	$0.38/Watt	$0.38/Watt	$0.32/Watt
GEOTHERMAL - (thermal) (4)	Non-Residential	Geothermal	$0.90/kWh	$0.90/kWh	$0.77/kWh	$0.77/kWh	$0.65/Watt
PV NON-RESIDENTIAL - small (2)	Non-Residential	Solar PV	$2.25/Watt	$2.25/Watt	$1.91/Watt	$1.91/Watt	$1.62/Watt
PV NON-RESIDENTIAL (grid-tied) (2)	Non-Residential	Solar PV	$2.25/Watt	$2.25/Watt	$1.91/Watt	$1.91/Watt	$1.62/Watt
PV NON-RESIDENTIAL(off-grid) (2)	Non-Residential	Solar PV	$1.35/Watt	$1.35/Watt	$1.15/Watt	$1.15/Watt	$0.98/Watt
SMALL WIND Non-Residential (grid-tied)	Non-Residential	Wind	$2.25/Watt	$2.25/Watt	$1.91/Watt	$1.91/Watt	$1.62/Watt
SMALL WIND Non-Residential (off-grid)	Non-Residential	Wind	$1.80/Watt	$1.80/Watt	$1.53/Watt	$1.53/Watt	$1.30/Watt
SOLAR SPACE COOLING (4,9)	Non-Residential	Solar - All Other	$0.90/kWh	$0.90/kWh	$0.77/kWh	$0.77/kWh	$0.65/kWh
SOLAR WATER HEATING/SPACE HEATING (4,9)	Non-Residential	Solar - All Other	$0.41/kWh	$0.41/kWh	$0.34/kWh	$0.34/kWh	$0.29/kWh
NON-RESIDENTIAL POOL HEATING (4)	Non-Residential	Solar - All Other	$0.09/kWh	$0.09/kWh	$0.08/kWh	$0.08/kWh	$0.07/kWh
SCHOOLS AND GOVERNMENT (10)							
SCHOOLS AND GOVERNMENT DAYLIGHTING (4)	Non-Residential	Other	$0.20/kWh	$0.18/kWh	$0.18/kWh	-	-

DISTRIBUTED ENERGY ADMINISTRATION PLAN CONFORMING PROJECT PRODUCTION BASED INCENTIVES

PBI Matrix 1	**Contract Years**	**10**					
	Residential or Non-Residential	**Resource Type**	**2011**	**2012**	**2013**	**2014**	**2015**
Non-Residential (6,10)							
BIOMASS/BIOGAS (electric)	Non-Residential	Biomass/Biogas	0.054/kWh	0.054/kWh	0.046/kWh	0.046/kWh	0.0391/kWh
BIOGAS/BIOMASS - CHP (electric) (7)	Non-Residential	Biomass/Biogas	0.032/kWh	0.032/kWh	0.027/kWh	0.027/kWh	0.02295/kWh
BIOGAS/BIOMASS - CHP (thermal) (7)	Non-Residential	Biomass/Biogas	0.016/kWh	0.016/kWh	0.014/kWh	0.014/kWh	0.0119/kWh
BIOMASS/BIOGAS (thermal)	Non-Residential	Biomass/Biogas	0.014/kWh	0.014/kWh	0.011/kWh	0.011/kWh	0.00935/kWh
BIOMASS/BIOGAS (cooling)	Non-Residential	Biomass/Biogas	0.029/kWh	0.029/kWh	0.025/kWh	0.025/kWh	0.02125/kWh
GEOTHERMAL - (electric)	Non-Residential	Geothermal	0.022/kWh	0.022/kWh	0.019/kWh	0.019/kWh	0.01615/kWh
GEOTHERMAL - (thermal)	Non-Residential	Geothermal	0.116/kWh	0.116/kWh	0.099/kWh	0.099/kWh	0.08415/kWh
PV NON-RESIDENTIAL - small	Non-Residential	Solar PV					
PV NON-RESIDENTIAL (grid-tied)	Non-Residential	Solar PV	0.154/kWh	0.154/kWh	0.131/kWh	0.131/kWh	0.11135/kWh
PV NON-RESIDENTIAL (off-grid)	Non-Residential	Solar PV	0.109/kWh	0.109/kWh	0.093/kWh	0.093/kWh	0.07905/kWh
SMALL WIND Non-Residential (grid-tied) (8)	Non-Residential	Wind	0.131/kWh	0.131/kWh	0.111/kWh	0.111/kWh	0.09435/kWh
SMALL WIND Non-Residential (off-grid) (8)	Non-Residential	Wind	0.105/kWh	0.105/kWh	0.089/kWh	0.089/kWh	0.07565/kWh
SOLAR SPACE COOLING (9)	Non-Residential	Solar - All Other	0.116/kWh	0.116/kWh	0.099/kWh	0.099/kWh	0.08415/kWh
SOLAR WATER HEATING/SPACE HEATING (9)	Non-Residential	Solar - All Other	0.051/kWh	0.051/kWh	0.043/kWh	0.043/kWh	0.03655/kWh
NON-RESIDENTIAL POOL HEATING	Non-Residential	Solar - All Other	0.011/kWh	0.011/kWh	0.009/kWh	0.009/kWh	0.00765/kWh

DISTRIBUTED ENERGY ADMINISTRATION PLAN CONFORMING PROJECT PRODUCTION BASED INCENTIVES

PBI Matrix 2	**Contract Years**	**15**					
	Residential or Non-Residential	**Resource Type**	**2011**	**2012**	**2013**	**2014**	**2015**
Non-Residential (6,10)							
BIOMASS/BIOGAS (electric)	Non-Residential	Biomass/Biogas	.05/kWh	.05/kWh	.043/kWh	.043/kWh	.037/kWh
BIOGAS/BIOMASS - CHP (electric) (7)	Non-Residential	Biomass/Biogas	.029/kWh	.029/kWh	.025/kWh	.025/kWh	.021/kWh
BIOGAS/BIOMASS - CHP (thermal) (7)	Non-Residential	Biomass/Biogas	.015/kWh	.015/kWh	.013/kWh	.013/kWh	.011/kWh
BIOMASS/BIOGAS (thermal)	Non-Residential	Biomass/Biogas	.013/kWh	.013/kWh	.011/kWh	.011/kWh	.009/kWh
BIOMASS/BIOGAS (cooling)	Non-Residential	Biomass/Biogas	.027/kWh	.027/kWh	.023/kWh	.023/kWh	.02/kWh
GEOTHERMAL - (electric)	Non-Residential	Geothermal	.02/kWh	.02/kWh	.017/kWh	.017/kWh	.014/kWh
GEOTHERMAL - (thermal)	Non-Residential	Geothermal	.108/kWh	.108/kWh	.092/kWh	.092/kWh	.078/kWh
PV NON-RESIDENTIAL - small	Non-Residential	Solar PV					
PV NON-RESIDENTIAL (grid-tied)	Non-Residential	Solar PV	.143/kWh	.143/kWh	.121/kWh	.121/kWh	.103/kWh
PV NON-RESIDENTIAL (off-grid)	Non-Residential	Solar PV	.101/kWh	.101/kWh	.086/kWh	.086/kWh	.073/kWh
SMALL WIND Non-Residential (grid-tied) (8)	Non-Residential	Wind	.121/kWh	.121/kWh	.103/kWh	.103/kWh	.088/kWh
SMALL WIND Non-Residential (off-grid) (8)	Non-Residential	Wind	.097/kWh	.097/kWh	.082/kWh	.082/kWh	.07/kWh
SOLAR SPACE COOLING (9)	Non-Residential	Solar - All Other			See Table 1 C		
SOLAR WATER HEATING/SPACE HEATING (9)	Non-Residential	Solar - All Other			See Table 1 B		
NON-RESIDENTIAL POOL HEATING	Non-Residential	Solar - All Other	.01/kWh	.01/kWh	.009/kWh	.009/kWh	.008/kWh
Schools and Government (10)							
PV SCHOOLS AND GOVERNMENT (grid-tied)	Non-Residential	Solar PV	.17/kWh	.145/kWh	.123/kWh	-	-
SOLAR SPACE COOLING	Non-Residential	Solar - All Other			See Table 1 C		
SOLAR WATER HEATING/SPACE HEATING	Non-Residential	Solar - All Other			See Table 1 B		

PBI Matrix 3 — Contract Years 20

	Residential or Non-Residential	Resource Type	2011	2012	2013	2014	2015
Non-Residential (6,10)							
BIOMASS/BIOGAS (electric)	Non-Residential	Biomass/Biogas	.048/kWh	.048/kWh	.041/kWh	.041/kWh	.035/kWh
BIOGAS/BIOMASS - CHP (electric) (7)	Non-Residential	Biomass/Biogas	.028/kWh	.028/kWh	.024/kWh	.024/kWh	.02/kWh
BIOGAS/BIOMASS - CHP (thermal) (7)	Non-Residential	Biomass/Biogas	.014/kWh	.014/kWh	.012/kWh	.012/kWh	.01/kWh
BIOMASS/BIOGAS (thermal)	Non-Residential	Biomass/Biogas	.012/kWh	.012/kWh	.01/kWh	.01/kWh	.009/kWh
BIOMASS/BIOGAS (cooling)	Non-Residential	Biomass/Biogas	.026/kWh	.026/kWh	.022/kWh	.022/kWh	.019/kWh
GEOTHERMAL - (electric)	Non-Residential	Geothermal	.019/kWh	.019/kWh	.017/kWh	.017/kWh	.014/kWh
GEOTHERMAL - (thermal)	Non-Residential	Geothermal	.104/kWh	.104/kWh	.088/kWh	.088/kWh	.075/kWh
PV NON-RESIDENTIAL (grid-tied)	Non-Residential	Solar PV	.138/kWh	.138/kWh	.117/kWh	.117/kWh	.099/kWh
PV NON-RESIDENTIAL (off-grid)	Non-Residential	Solar PV	.065/kWh	.065/kWh	.083/kWh	.083/kWh	.071/kWh
SMALL WIND Non-Residential (grid-tied)	Non-Residential	Wind	.117/kWh	.117/kWh	.099/kWh	.099/kWh	.084/kWh
SMALL WIND Non-Residential (off-grid)	Non-Residential	Wind	.094/kWh	.094/kWh	.08/kWh	.08/kWh	.068/kWh
SOLAR SPACE COOLING (9)	Non-Residential	Solar - All Other	.104/kWh	.104/kWh	.088/kWh	.088/kWh	.075/kWh
SOLAR WATER HEATING/SPACE HEATING (9)	Non-Residential	Solar - All Other	.045/kWh	.045/kWh	.039/kWh	.039/kWh	.033/kWh
NON-RESIDENTIAL POOL HEATING	Non-Residential	Solar - All Other	.01/kWh	.01/kWh	.008/kWh	.008/kWh	.007/kWh
Schools and Government (10) [1]							
PV SCHOOLS AND GOVERNMENT (grid-tied)	Non-Residential	Solar PV	.155/kWh	.132/kWh	.112/kWh	-	-
SOLAR SPACE COOLING	Non-Residential	Solar - All Other	.104/kWh	.104/kWh	.088/kWh	-	-

[1] Solar Space Heating and Solar Water Heating are not available for 20 year contracts under the proposed Schools and Government Program

Table 1A	PV RESIDENTIAL GRID-TIED SOLAR ELECTRIC INCENTIVE REDUCTIONS								
Tranche[1]	1	2	3	4	5	6	7	8	9
Incentive Level ($/watt)	$1.75	$1.60	$1.45	$1.30	$1.20	$1.10	$1.00	$0.95	$0.90
Number of Reservations	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Cumulative Capacity Anticipated	8 MW	16 MW	24 MW	32 MW	40 MW	48 MW	56 MW	64 MW	72 MW
Anticipated Program Year	2011	2011	2011/2012	2012	2012/2013	2013	2014	2014/2015	2015

[1] A rapid reservation incentive is available throughout a tranche at a level defined in on page 23 of the Implementation Plan

Table 1B **SOLAR WATER HEATING/SPACE HEATING**

Contract Years 15

	PBI Payments				
	2011	**2012**	**2013**	**2014**	**2015**
Contract Year 1	.077/kWh	.077/kWh	.065/kWh	.065/kWh	.056/kWh
Contract Year 2	.074/kWh	.074/kWh	.062/kWh	.062/kWh	.053/kWh
Contract Year 3	.07/kWh	.07/kWh	.059/kWh	.059/kWh	.05/kWh
Contract Year 4	.067/kWh	.067/kWh	.056/kWh	.056/kWh	.048/kWh
Contract Year 5	.064/kWh	.064/kWh	.053/kWh	.053/kWh	.045/kWh
Contract Year 6	.061/kWh	.061/kWh	.051/kWh	.051/kWh	.043/kWh
Contract Year 7	.058/kWh	.058/kWh	.048/kWh	.048/kWh	.041/kWh
Contract Year 8	.055/kWh	.055/kWh	.046/kWh	.046/kWh	.039/kWh
Contract Year 9	.052/kWh	.052/kWh	.043/kWh	.043/kWh	.037/kWh
Contract Year 10	.049/kWh	.049/kWh	.041/kWh	.041/kWh	.035/kWh
Contract Year 11	.037/kWh	.037/kWh	.031/kWh	.031/kWh	.026/kWh
Contract Year 12	.028/kWh	.028/kWh	.023/kWh	.023/kWh	.02/kWh
Contract Year 13	.021/kWh	.021/kWh	.017/kWh	.017/kWh	.015/kWh
Contract Year 14	.016/kWh	.016/kWh	.013/kWh	.013/kWh	.011/kWh
Contract Year 15	.012/kWh	.012/kWh	.01/kWh	.01/kWh	.008/kWh

Table 1C SOLAR SPACE COOLING
Contract Years 15

	PBI Payments				
	2011	**2012**	**2013**	**2014**	**2015**
Contract Year 1	.165/kWh	.165/kWh	.14/kWh	.14/kWh	.119/kWh
Contract Year 2	.157/kWh	.157/kWh	.133/kWh	.133/kWh	.113/kWh
Contract Year 3	.149/kWh	.149/kWh	.127/kWh	.127/kWh	.108/kWh
Contract Year 4	.142/kWh	.142/kWh	.12/kWh	.12/kWh	.102/kWh
Contract Year 5	.135/kWh	.135/kWh	.114/kWh	.114/kWh	.097/kWh
Contract Year 6	.128/kWh	.128/kWh	.109/kWh	.109/kWh	.092/kWh
Contract Year 7	.122/kWh	.122/kWh	.103/kWh	.103/kWh	.088/kWh
Contract Year 8	.116/kWh	.116/kWh	.098/kWh	.098/kWh	.083/kWh
Contract Year 9	.11/kWh	.11/kWh	.093/kWh	.093/kWh	.079/kWh
Contract Year 10	.105/kWh	.105/kWh	.088/kWh	.088/kWh	.075/kWh
Contract Year 11	.074/kWh	.074/kWh	.066/kWh	.066/kWh	.056/kWh
Contract Year 12	.052/kWh	.052/kWh	.05/kWh	.05/kWh	.042/kWh
Contract Year 13	.036/kWh	.036/kWh	.037/kWh	.037/kWh	.032/kWh
Contract Year 14	.025/kWh	.025/kWh	.028/kWh	.028/kWh	.024/kWh
Contract Year 15	.018/kWh	.018/kWh	.021/kWh	.021/kWh	.018/kWh

DISTRIBUTED ENERGY ADMINISTRATION PLAN – INCENTIVE MATRIX NOTES

(1) Residential projects are only eligible for up-front incentives (UFI). Residential grid-tied PV projects are capped at 25 kW.

(2) Some installations will require an adjustment of the incentive as detailed in the PV Off-Angle Shading and Incentive Adjustment Chart as shown in Exhibit 4.

(3) Residential Solar Thermal is a single system design that produces both space heating and water heating for residential use. These applications require an ES&D report detailing energy savings for the complete system.

(4) Incentive applies to rated first year energy savings only. An Energy Savings and Design (ES&D) report may be required to determine first year energy savings.

(5) Energy savings rating is based on the SRCC OG-300 published rating.

(6) Non-residential projects with a total incentive of less than or equal to $75,000 are only eligible for a UFI. Non-residential projects with a total incentive of greater than $75,000 are only eligible for a production-based incentive (PBI).

(7) The CHP incentives may be used in combination for the appropriate components of one system.

(8) The small wind PBI applies to a maximum system size of 100 kW. A larger wind system may apply for an incentive as a non-conforming project.

(9) The solar space heating and cooling incentives may be used in combination for the appropriate components of one system. Solar space cooling incentives require an SRCC OG-100 rating.

(10) Schools and governmental entities are eligible to apply for available incentives under the schools and government program and the non-residential program. Projects are required to meet program requirements.

(11) Residential home builders are eligible to apply for incentives under the home builder program and the residential program. Projects are required to meet program requirements.

Exhibit 2

Solar Space Heating Incentive Calculator

Solar Space Heating Incentive Calculation Procedure.

In Advance, please perform the Design Review and Utility Bill Review (if Applicable) for numbers to enter in Steps #1, #2 and #5.

Elevation Zone Table:

Min Elevation	Max Elevation	Heating Season Days	Daily Panel Heat Output
-1000	1000	105	0
1001	3000	140	0
3001	5000	175	0
5001	7000	210	0
7001	9000	245	0
9001	11000	280	0

Collector Thermal Performance Rating

Data From OG-100 Sheet

Category:	Delta T	Clear Day
A	-9 Deg. F.	
B	+9 Deg. F.	
C	+36 Deg. F.	
D	+90 Deg. F.	
E	+144 Deg. F.	

Enter Solar Panel Make and Model Number Selected for Project:

Step #1:	Enter the result of the Design Review of the Design Annual Building Loss =		BTU/Year
Step #2:	Enter the result of the Utility Bill Review of the Actual Annual Building Loss: (If not Electric, Natural Gas or Propane Heat, enter 0) =	0	BTU/Year
Step #3:	Calculate the Lesser of the Result in Step #1 & Step #2 = This is the Annual Building Heat Requirement.	0	BTU/Year
Step #4:	Enter Elevation of the Solar Space Heated Building:		Feet AMSL
Step #4 cont:	Number of Heating Days per Heating Season from Elevation Zone Table:	105	Days per Year
Step #4 cont:	Calculate Average Daily Building Heat Requirement =	0	BTU/Day
Step #5:	Enter Passive Heat Storage Specific Heat Capacity from Building Design Review:		BTU/Deg. F.
Step #5 cont:	Enter Maximum Daily Room Temperature Variation Allowed by Building Occupants: (Max of 10 Degrees F.)		Degrees F.
Step #5 cont:	Calculate Maximum Passive Heat Storage Capacity =	0	BTU
Step #5 cont:	Enter Total Active Heat Storage Heat Capacity from Building Design Review:		BTU
Step #5 cont:	Calculate Maximum Total Heat Storage Capacity =	0	BTU
Step #6:	Calculate the Lesser of the Average Daily Building Heat Requirement in Step #4 and the Maximum Total Storage Capacity in Step #5. This is the Maximum Useful Daily Solar Heat Input.	0	BTU/Day
Step #7:	Size the Solar Panels based on a total daily solar heat input no	0	BTU/Day per Panel
Step #7cont:	Enter the Total number of solar panels to be installed:		# of Panels
Step #7cont:	Calculate the Average Expected Daily Solar Heat Input:	0	BTU/Day
Step #8:	Calculate the Expected Annual Useful Solar KWH Heat Input using the Number of Heating Days times the Average Expected Daily Solar Heat Input / 3415 BTU/KWH:	0	KWH/Year
Step #9:	Enter the UFI per first year KWH UCPP Incentive Rate:	$0.50	$/KWH
Step #10:	Enter the Total Solar Space Heating System Initial Cost: This should not include costs for Passive Heat Storage or Building Heating System.		$

Exhibit 3

Standard Project PBI Ranking Calculator

APS Project Ranking Calculators

PBI INDEX CALCULATOR

	Input Terms	
P1	Incentive Terms	10-year PBI, 10 year REC
P2	Project Cost ($)	100
P3	Estimated Annual Production (kWH)	1
P4	Requested PBI ($/kWH)	0.0100
	Output Terms	
P5	Index Value	111
P6	Calculated Incentive Cap	60
P7	Total Incentive Payout	0

Pull-down box for input of PBI term

Input Project Cost

Input Estimated Annual Energy Production in KWHs

Input requested PBI rate

Index Value

UFI INDEX CALCULATOR

	Input Terms	
U1	Technology Incentive Type	Up Front Incentive
U2	Capital Cost ($)	100
U3	Capacity (kW)	1
U4	Estimated Annual Production (kWH)	1
U5	Requested Incentive ($/Watt or $/kWH)	0.0100
	Output Terms	
U4	Index Value	7,358
U5	Total Incentive Payout	10

Pull-down Box for UFI type

Input Capital Cost of Project - ($s)

For incentives based on capacity: Input Rated Size of System in kW, this input is not used for First Year Energy Savings.

Input Annual Energy Production in kWHs for System Capacity UFIs, otherwise, for First Year Energy Savings kWH savings.

Index Value

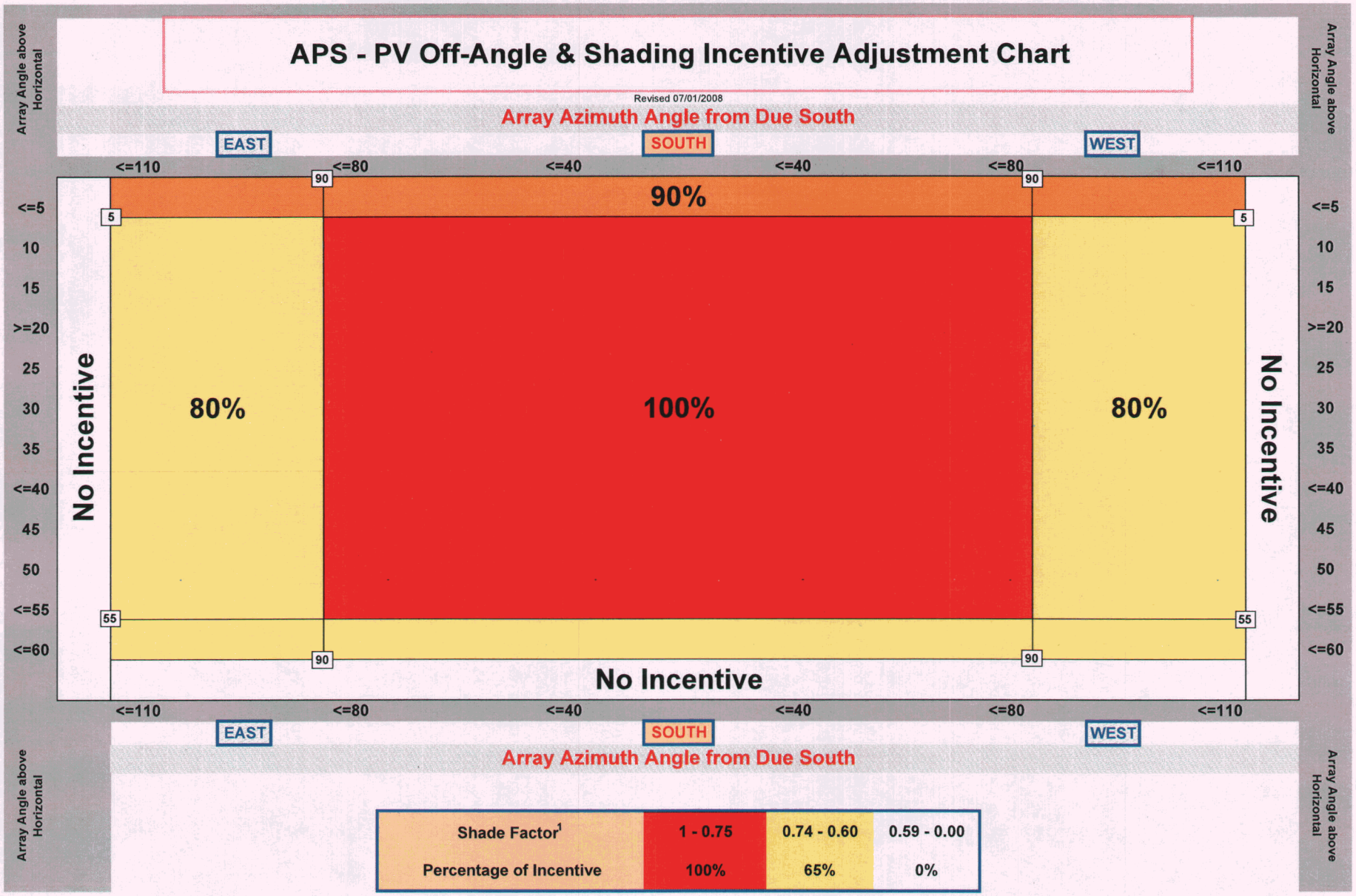
Input requested incentive. For System Capacity UFIs, input $/Watt, otherwise, for First Year Energy Savings input $/kWH.

Exhibit 4

PV Off-Angle and Shading Adjustment Table

APS - PV Off-Angle & Shading Incentive Adjustment Chart

Revised 07/01/2008



Shade Factor[1]	1 - 0.75	0.74 - 0.60	0.59 - 0.00
Percentage of Incentive	100%	65%	0%

The system installation will receive the lowest applicable incentive adjustment, reading from both the installation Angle Chart and Shading Adjustment

Notes:

1 "Shade Factor" is the percentage of annual solar insolation expected given latitude, shading and the available solar window.

EXHIBIT C

EXHIBIT C
ADJUSTMENT SCHEDULE RES
RENEWABLE ENERGY STANDARD

APPLICATION

The Renewable Energy Standard ("RES") Adjustor shall apply to all retail Standard Offer or Direct Access service, excluding kWhs served in accordance with rate schedules Solar-2, Solar-3, and Adjustment Schedules GPS-1, GPS-2, and GPS-3. All provisions of the customer's current applicable rate schedule will apply in addition to the RES Adjustor. From time to time, the RES program spending requirements will be evaluated and if necessary the charge and/or caps may be modified by the Commission. Any new charges/caps will be applied in billing cycle 1 beginning in the month following Commission approval in A.C.C. Decision No. 70654 and will not be prorated. Details regarding the administration of this Adjustor can be found in A.A.C. R14-2-1808. The RES Adjustor and the Demand Side Management Adjustor may be combined on the customer's bill and shown on the "Environmental Benefits Surcharge" line.

RATES

The bill shall be calculated at the following rates:

All kWh	$0.009663	per kWh

SURCHARGE LIMITS

The monthly total of the Renewable Energy Standard Adjustment Charge shall not exceed the following limits:

Residential Customers	$3.87	per service per month
Non-residential Customers	$143.56	per service per month
Non-residential Customers with demand of 3,000 kW or higher per month for three consecutive months	$430.67	per service per month

EXHIBIT D

AVAILIBILITY

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, E-32TOU L, GS-SCHOOLS M, and GS-SCHOOLS 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 can 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.

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
GS-SCHOOLS M, GS-SCHOOLS L	$0.07158

(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 and adjustments 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.

- GS-SCHOOLS M, GS-SCHOOLS L – Solar Energy shall be netted from the on-peak, shoulder-peak and off-peak kWh according to the following allocation:

Season	Time Period		
	On-Peak	Shoulder-Peak	Off-Peak
Summer Peak (Jun-Aug)	15.0%	35.0%	50.0%
Summer Shoulder (May, Sep & Oct)	15.0%	35.0%	50.0%
Winter (Nov-Apr)	20.0%	10.0%	70.0%

If the net kWh is less than zero in any period, the remaining kWh shall be applied first to the on-peak, and then the shoulder-peak, and the off-peak period if necessary, where the resulting kWh in any period 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.

EXHIBIT E

EXHIBIT E

Arizona Public Service Company

Arizona Public Service
Renewable Energy Standard
Implementation Plan
2011 to 2015

REVISED

October 13, ~~July 1,~~ 2010

TABLE OF CONTENTS

ATTACHED EXHIBITS

I. EXECUTIVE SUMMARY

Arizona Public Service Company ("APS" or "Company") has prepared this Implementation Plan ("Plan") for the five-year period of 2011 to 2015 in compliance with the Arizona Renewable Energy Standard ("RES"),[1] which requires the filing of an annual plan describing how utilities intend to comply with the rule requirements for the next five years. This Plan describes the renewable energy resources that will be added over the next five years to achieve APS's annual RES targets and rate settlement commitments, the estimated customer funding and surcharge amounts (RES adjustor) required to acquire those resources, and a budget that allocates funding for specific projects and programs. The current RES requirement is three (3) percent of total retail sales in 2011, and the rules prescribe that 25 percent of that requirement is to come from distributed energy ("DE") solutions.

Additionally, in the Company's most recent rate case (the "Settlement Agreement"),[2] which was approved in December 2009 by the Arizona Corporation Commission ("ACC" or the "Commission"), provisions were adopted that exceeded the requirements of the RES. The Settlement Agreement required, among other provisions, that "APS shall make its best efforts to acquire new renewable energy resources with annual generation or savings of 1,700,000 MWh to be in-service by December 31, 2015…",[3] and further states that "these new resources shall be in addition to existing resources or commitments as of the end of 2008…".[4] Therefore, APS expects to approximately double its RES requirement of 5 percent of its retail sales in 2015 generated by renewable energy, and will thereby exceed its Renewable Generation and DE targets for both residential and non-residential programs in 2011 and throughout the five year planning period. The Company's Plan is also consistent with APS's planning goals and resource acquisition plans described in the Company's Resource Plan Report ("RPR") filed with the Commission on January 29, 2009[5]. ~~and with energy targets described in public stakeholder workshops supporting the Company's expected 2010 Integrated Resource Plan ("IRP") filing.~~

This document revises the Implementation Plan originally filed by APS on July 1, 2010 (the "July Filing") and includes provisions incorporated in conformance with orders described by Decision No. 71913[6]. This amendment also includes revisions to select strategies and programs based upon developing market conditions.

As part of this plan, APS is updating information regarding current RES funding, and proposed additions and modifications to the July Filing based on intervening circumstances and updated information. This includes a proposed process outline and fee structure for interconnection studies for wholesale generators seeking interconnection to the APS energy distribution system, a revised methodology for budgeting actual annual financial obligations associated with in-

[1] A.A.C. R14-2-1801, *et. seq.*
[2] Decision No. 71448 (December 30, 2009).
[3] Settlement Agreement, paragraph 15.1.
[4] *Id.*
[5] Docket No. E-01345A-09-0037.
[6] Docket No. E-01345A-09-0338.

service scheduling of Production Based Incentives (PBIs), and updates to the Distributed Energy Administration Plan ("DEAP") and related schedules.

~~As a separate document,~~ ~~t~~The Company is filing its updated DEAP as a separate document. ~~updated Distributed Energy Administration Plan ("DEAP").~~ The DEAP describes the participation process for a wide range of customers, presents incentive levels, and discusses eligible technologies and system requirements, which together provide an overall program that APS believes will encourage continued customer participation. In this filing, APS has also made incremental enhancements to the DEAP approved as part of the Revised 2010 RES Implementation Plan ("2010 Plan").[7]

This Plan and the DEAP are built on the foundation of the Company's 2010 Plan. A few key elements reflected in this Plan are provided below:

- APS plans for the Commission-approved AZ Sun Program to yield up to 50 MW of new solar generation projects in the APS resource portfolio by 2012 as a result of the Company's efforts to speed the deployment of solar PV resources.
- Since the filing of the 2010 Plan in October 2009, customer participation in APS residential and non-residential DE programs has increased significantly, requiring APS to request Commission approval for interim modifications to incentive programs. This Plan describes new DE incentive levels, a predefined incentive reduction strategy, and annual funding allocation strategies to encourage continued program participation.
- In response to customer and Commission interest in Feed-in Tariffs ("FIT"), two new programs have been proposed to deploy renewable energy projects. First, "Powerful Communities," a Wholesale Distributed Energy FIT, targets PV facilities between 30kW and 200kW for customer segments that have not historically had a clear vehicle for participation in APS's DE program offerings. Second, the Small Generator Standard Offer will seek projects of all renewable resource technology types from 2MW to 15MW against a pre-determined and pre-approved multi-year budget. The program introduces mechanisms to streamline the procurement and interconnection of identified projects.
- In response to the Settlement Agreement, APS is expanding the Schools and Government Program to facilitate projects in low income or rural areas and is offering no-cost solar daylighting installations to districts or governmental entities that participate in the PV program. The proposed program modifications were filed in a separate docket in April 2010.[8]
- APS is maintaining an aggressive approach to marketing its DE programs through expanded education and outreach campaigns as well as TV, print, web, and other media initiatives. The development of high-visibility demonstration projects, the full execution of the Qualified Solar Installer ("QSI") program, and continued partnering with lending institutions are examples of efforts to expand customer awareness, participation, and understanding of DE programs.
- APS is proposing a program to encourage the construction of innovative renewable energy technologies and deployment strategies.

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[7] Decision No. 71459 (January 29, 2010).
[8] Docket No. E-01345A-10-0166.

APS currently estimates the cost of its RES related projects and programs to be $~~96.4~~92.5 million[9] in 2011, increasing to an annual cost of $~~193.0~~170.0 million by 2015. The proposed Plan is estimated to cost a total of $~~738.3~~658.0 million over the five-year Plan period. The peak annual cost in this five-year planning window is $~~193.0~~170.0 million in 2015, primarily attributable to the first full year of commercial operation of the Solana Generating Facility in 2014 ~~and the deployment of 100 MW of solar PV resources under the AZ Sun Program~~.

RES funding is intended to cover the cost of utility scale renewable generation in excess of the cost of conventional resource alternatives, incentive payments for DE resources, marketing expenses, and program implementation and administration costs.[10] The costs for renewable generation proposed to be collected through the RES adjustor during 2011 are partly based on APS's existing contracts and APS's Small Generation Pilot Program. These contracts will enable APS to meet renewable generation and total RES energy and Settlement Agreement targets in 2011 and through the duration of the five-year planning period. The costs for DE incentives and the program budgets are based on incentives developed as part of both Commission and APS-hosted stakeholder workshops, preliminary results from APS's Small Generator and AZ Wind Request for Proposals ("RFPs"), and APS's experience and projections of market penetration for the various technologies available to consumers.

At this time, APS is requesting adjustor funding of $~~90.4~~86.5 million for 2011 (the adjustor for 2010 is currently designed to collect approximately $80.7 million annually). The requested adjustor amount, along with the $6 million collected in base rates, would total the $~~96.4~~92.5 million of funding to meet 2011 requirements.

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[9] ~~The total cost of $97.3 million does not include the $3.2 million rollover funds from 2009.~~

[10] For renewable assets owned by APS, RES funding is intended to cover the revenue requirements associated with ownership until such time these renewable assets are included in base rates or another mechanism.

II. INTRODUCTION

A. Renewable Energy Requirements

The Arizona RES was established in August 2007, and requires APS to file an Implementation Plan each year for review and approval by the ACC.[11] The Plan must describe the procurement of renewable energy resources for the next five calendar years that will meet the requirements of the RES, identifying the considered technologies, the expected schedule for the resource incorporation on a year-by-year basis, and the kW and kWh expected to be added to the APS portfolio by the incorporation of those resources.[12] The RES provides that reasonable and prudent costs incurred to comply with the RES Rules are recoverable.[13] Further, the RES provides that implementation of the approved Plan by the utility shall serve to measure the utility's compliance with the RES.[14]

APS has prepared this Plan for the five year period 2011-2015 in compliance with the RES Rules. The RES requires that affected utilities satisfy an annual renewable energy requirement by providing a percentage of their electric retail sales from renewable resources. The required percentage for the current implementation period begins at three (3) percent in 2011 and increases to five (5) percent in 2015.[15] That minimum percentage increases to 15 percent of the utility's total retail sales by the year 2025.[16]

The RES rules define renewable resources as: 1) renewable generation ("RG") projects that are constructed solely to export energy production to the utility; and 2) distributed energy ("DE"), a renewable resource application installed at the customer premises and used to displace customer energy consumption.[17] As part of the RES, the energy generated or displaced by DE is applied towards the percentage of the utility's distributed renewable energy requirement.[18] For both RG and DE, kWh derived from renewable resources for purposes of compliance with the RES are tracked as Renewable Energy Credits ("REC"), where one kWh equals one REC.[19]

Additionally, in the Settlement Agreement provisions were adopted that exceeded the requirements of the RES. That agreement required, among other provisions, that "APS shall make its best efforts to acquire new renewable energy resources with annual generation or savings of 1,700,000 MWh to be in-service by December 31, 2015…".[20] It further states that "These new resources shall be in addition to existing resources or commitments as of the end of 2008…".[21] APS expects to double its RES requirement of 5 percent of its retail sales generated

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[11] A.A.C. R14-2-1813(A).
[12] *Id.*
[13] A.A.C. R14-2-1808.
[14] A.A.C. R14-2-1815(C).
[15] A.A.C. R14-2-1804(B).
[16] *Id.*
[17] A.A.C. R14-2-1802.
[18] A.A.C. R14-2-1805(B).
[19] "Renewable Energy Credit" means the unit created to track kWh derived from an Eligible Renewable Energy Resource or kWh equivalent of Conventional Energy Resources displaced by Distributed Renewable Energy Resources. A.A.C. R14-2-1801(N).
[20] Settlement Agreement, Paragraph 15.1.
[21] *Id.*

by renewable energy by 2015. APS anticipates exceeding compliance with the RES renewable energy requirement in each of the five years covered by this Plan. Attached as Exhibit 1A and Exhibit 1B are summaries of the APS targets, energy requirements, and program budget.

B. 2011 – 2015 Renewable Energy Standard Program Funding

APS's proposed Plan is estimated to cost a total of $~~738.3~~658.0 million over the five-year Plan period. This Plan is anticipated to result in APS exceeding its DE target and the Company's overall RES requirements in each year. The cost for 2011 is estimated to be $~~96.4~~92.5 million[~~22~~], increasing to $~~193~~ 170.0 million in 2015. Of the $~~96.4~~92.5 million forecasted for 2011, $~~16.2~~21.2 million is forecasted for RG projects, $~~78.2~~69.3 million is reserved for DE programs, and $~~2.0~~2.0 million is applied to Research, Development, Commercialization and Integration ("RDC&I"). The increase in annual costs during this five year period is primarily driven by increasing energy targets, the expected start of commercial operation of the Solana Generating Facility, new utility-scale photovoltaic generation, and DE program expansion. In this Plan, APS requests recovery of the estimated 2011 costs of approximately $~~90.4~~86.5 million through the RES adjustor, which is ~~an~~a $~~9.7~~5.8 million increase over the $80.7 million currently collected on an annualized basis. The requested adjustor amount, along with the $6 million collected in base rates, would total the $~~96.4~~92.5 million of funding needed to meet or exceed the requirement. In each succeeding year, as part of its Implementation Plan, APS will continue to request a reset of the adjustor to collect the estimated costs for the following calendar year. The budget summary can be found in Exhibits 2A and 2B.

This Plan makes reasonable assumptions concerning renewable energy resources, and builds on APS's continued experience with these programs. Future plans will continue to account for the realities APS encounters in adhering to the RES requirements.

The programs and RG and DE requirements referenced in this Plan are described in relationship to compliance with the RES requirements; however, the procurement strategies and budget assumptions are intended to allow APS to meet or exceed the RES requirements, as well as the elevated requirements set forth in the Settlement Agreement.

[~~22~~] ~~The total cost of $97.3 million does not include the $3.2 million rollover funds from 2009.~~

III. RENEWABLE GENERATION PROGRAM OVERVIEW

A. Renewable Generation Requirements

Renewable generation is represented by projects that export their energy production to the utility and use renewable energy resources such as wind, solar, geothermal, biomass and biogas to generate electricity. While these projects are typically large-scale renewable generation facilities, they can also be smaller in size and still used to serve utility load. Energy produced from those resources is delivered through the transmission and/or distribution systems and, ultimately, to the utility's customers.

The RES targets are energy based (kWh), with no capacity (kW) requirements. However, the Plan utilizes generation capacity assumptions to forecast compliance with the energy targets. When equating energy targets to planned capacity levels, it is important to recognize that the capacity factors for various RG technologies vary significantly.[23] Some technologies, such as geothermal and biomass, are very predictable and can produce at capacity factors of 80 to 90 percent, similar to conventional base load generation. Some renewable generation technologies, such as solar, are predictable, but have inherently low capacity factors of 15 to 30 percent, driven by the daily availability of solar radiation. The incorporation of storage technologies similar to those proposed as part of the Solana Generating Facility project has the potential to increase the capacity factor of Concentrating Solar Power ("CSP") projects to 40 percent annually. Other renewable generation technologies, such as wind, are less predictable on a real-time basis. However, wind will generally produce capacity factors in the range of 25 to 40 percent annually, depending on the characteristics of the wind resource in a given location.

The balance of the technologies employed is critical as the ultimate portfolio balance will dictate the additional capacity required to achieve the energy targets. Exhibit 3B provides the level of capacity for the specific blend of technologies assumed in this Plan for the coming five years. Targeted additions described in Exhibit 3B assume a technology mix of the various resources APS plans to acquire based on its current resource strategy. The actual resource mix procured in 2011 may vary slightly from the forecasted mix described in the Plan. The economics of a particular resource or technology will ultimately determine the extent to which any one technology is employed as part of the overall portfolio.

In 2009, APS exceeded its RG target by 26 percent[24] and plans to continue to go beyond its annual RES requirements and achieve the goals detailed in the Company's Settlement Agreement. APS has based its RG program budget and energy procurement on several assumptions, which are discussed below.

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[23] Capacity factor is a value used to express the average production level of a generating unit over a given period of time. Capacity factor is expressed as a percentage of the maximum possible production if the generating unit had operated at its maximum capacity rating for all hours during the period. For example, a generating facility which operates at an average of 60 percent of its maximum capacity over a measured period has a capacity factor of 60 percent for that period.

[24] In 2009, APS's RG requirement under the RES was 478,946 MWh. By year end, APS actually generated 604,414 MWh.

The energy required to meet the APS targets and the allocation established to support anticipated demand for the Green Choice Power rates[25] in each of the next five years is outlined in Exhibit 1B.

The Plan was designed with sufficient flexibility to provide the best opportunity to meet or exceed APS's renewable energy commitments in a cost effective manner. The Plan provides descriptions of the current projects under contract, as well as the expected resource additions over the next five years. The renewable resources contemplated under this Plan are consistent with APS's short and long-term planning goals and resource acquisition plans described in the Company's RPR, and as described in stakeholder workshops supporting an expected 2010 filing of the Company's Integrated Resource Plan.

APS believes a key component of its procurement strategy is the diversification within its RG portfolio to include a mix of both utility ownership and purchased power agreement ("PPA") projects. Acquisition of solar resources through utility ownership is consistent with the Company's resource plan and will play an important role in its ability to meet overall RES and Settlement Agreement requirements.

B. Existing and Targeted Renewable Generation Projects

1. *Existing Renewable Generation Projects*

In 2011, APS's Plan targets about ~~270~~ 287 MW of RG, all of which ~~244 MW are~~is either already in-service or are contracted to be developed. APS has 592~~6~~ MW of photovoltaic capacity from solar generation projects; including 6 MW of APS owned facilities, ~~and~~ 20 MW through a PPA from the 2009 Small Generation Pilot Program, and 33MW of the first two installments of AZ Sun ~~both~~all of which are planned for service in 2011 and 2012. Existing contracts for additional RG resources include 190 MW of wind generation, 10 MW of geothermal generation and ~~18~~ 28 MW of biomass/biogas generation.

In 2008, APS executed a purchase power agreement ("PPA") to acquire approximately 60 percent of the renewable energy from a biomass power generation facility located in Snowflake, Arizona. Salt River Project ("SRP") purchased the other portion of the facility's power. In July 2010, SRP requested termination of its contract with Snowflake White Mountain Power LLC, and the biomass company filed for Chapter 11 reorganization.

The renewable energy from the Snowflake facility plays a significant role in APS's renewable compliance portfolio. To facilitate the continuing operation of the biomass plant, in September 2010, APS executed a one-year contract to purchase all of the plant's

[25] Original Green Choice Power rate schedules GPS-1 and GPS-2 were approved by the Commission in Decision No. 69663 (June 28, 2007). Revisions to GPS-1 and GPS-2 and the new Green Power rate schedule GPS-3 were approved by the Commission on September 17, 2009 in Decision No. 71276. The Green Choice Power rates were created to allow customers to purchase a portion of their energy usage from renewable resources. These purchases are not applied towards the targets described by the RES.

output. The additional energy, capacity, and above market costs derived from the purchase of the entire output of the biomass plant are reflected in Exhibits 3A, 3B, and 3C of the Revised 2011 Plan (respectively). The 10 MW of additional output from the Snowflake facility has been reflected in the summary of existing renewable generation projects noted in this section.

2. *Targeted Renewable Generation Projects*

The intent of this Plan is to develop and evaluate the renewable resources for procurement in both the near-term (2011-2013) and the longer-term (2014 and beyond) of this five-year Plan planning cycle.

In the first half of 2010, APS issued RFPs in three competitive solicitations: an Arizona Wind RFP, a PV RFP, and a Small Generation RFP which serves as the first solicitation of the Company's Small Generator Standard Offer, as further discussed in Section III.C.(3). These three competitive solicitations combined seek more than 477,000 MWh annually. In 2010, the Company has signed three contracts under its 2009 Small Generation Pilot Program for over 48,000 MWh annually. Projects resulting from these solicitations, in conjunction with APS's approved AZ Sun Program and the requirements set forth in the Settlement Agreement, add over 1,400,000 MWh to APS's RG portfolio by 2015. The specific approach to acquiring these resources is described in the following section.

C. Renewable Generation Procurement Plan

APS plans to support the near-term need for additional energy output primarily from three established generation procurement plans, as well as additional competitive solicitations as needed. The three generation procurement plans consist of: 1) the AZ Sun Program, 2) the Arizona Wind Project, and 3) the Small Generator Standard Offer. As a result of Decision No. 71502 (March 17, 2010), APS is required to procure at least 25 MW of solar generation from Independent Power Producers ("IPP"), which the Company plans to acquire through either the Small Generator Standard Offer or other competitive solicitations. Exhibit 1C demonstrates APS's RG procurement timeline.

1. *AZ Sun Program*

In Decision No. 71502, the Commission approved APS's request to develop 100 MW of utility-owned solar generation through the AZ Sun Program. This Decision authorized the Company to develop the first 50 MW and recover the revenue requirements associated with these installations through the RES adjustor until such time as it can either be incorporated into APS's base rates or recovered through an alternate mechanism. Further, the Commission ruled that revenue requirements for the remaining 50 MW will be recovered through a mechanism to be addressed in the Company's next rate case consistent with Section 15.7 of the Settlement Agreement.

- The AZ Sun Program received authorization for a capital investment of up to $500 million between 2011 and 2014 to develop 100 MW of solar generation capacity. This investment is based on estimated solar PV capital cost of $5.00/watt. The cost of the actual systems deployed will be based on competitive procurement processes, and will most likely vary with the size of the system. APS intends to have 50 MW of AZ Sun PV systems installed and in-service by 2012.

Pursuant to the Settlement Agreement, the Company filed a Utility Scale Photovoltaic Plan in April of 2010.[26] One of the components of that Plan is the 2010 Photovoltaic ("PV") RFP, in which the qualifying project was required to have a construction initiation date no later than 18 months from the date of the Plan filing. To expedite deployment and to ensure a solar generation project will begin construction within the required 18 months, APS issued the 2010 PV RFP on January 27, 2010. On April 8, 2010 APS received over 120 proposals from over 50 entities. The proposed projects were located throughout the Southwest and ranged in size from 15 MW to 50 MW. APS received bids for both turnkey and PPA projects.

2. *Arizona Wind Project*

As a result of APS's Settlement Agreement, the Company issued an RFP for in-state wind generation on January 27, 2010. APS received 14 proposed projects from seven (7) entities by the close of the RFP in April 2010, all of which were for projects through PPAs. All of the projects proposed were located in northern Arizona and ranged in size from 20 MW to 100 MW. The Settlement Agreement further required APS to file for Commission approval of the selected project within 180 days of issuing the RFP ~~(July 27, 2010)~~. As a result of this process, APS submitted ~~APS plans to submit~~ a separate filing for approval of the ~~selected~~ Perrin Ranch Wind ~~p~~Project~~, with recommendations on whether the project is economically viable and whether it matches the Company's IRP objectives.~~on July 26, 2010.[27]

3. *Small Generator Standard Offer*

The 2010 solicitation for small generation, issued April 27, 2010, served as the first in a series of solicitations that define the Company's Small Generator Standard Offer. The program is intended to assist developers in providing APS with renewable generation projects ranging from 2 MW to 15 MW. This smaller project scale is used to bring projects into commercial operation within expedient timeframes through the following mechanisms:

- Committing and receiving authorization for an annual budget for the term of the contract;
- Encouraging high proposition projects;
- Conducting regularly scheduled and repeated project solicitations;

[26] By letter dated April 29, 2010 in Docket No. E-01345A-08-0172.
[27] Docket No. E-01345A-10-0314.

- Offering a standard contract to all program participants; and
- Working to improve and streamline the interconnection review/design process.

The Small Generator Standard Offer will have an annual budget of $10 million dollars over the three-year full deployment period. This program builds on knowledge gained from the 2009 Small Generation Pilot in that it is limited by budget rather than by size. Given the robust interest in the 2009 Small Generation Pilot, the Company believes the competitive pricing design will result in the greatest amount of renewable energy development for the ratepayer at the least cost. Additionally, a pre-approved program budget will allow for an expedited transaction and financing process.

Eligible renewable facilities and their applicative criteria are described in the 2010 solicitation for Small Generation, and are similar to those included in the 2009 Small Generation Pilot. APS will seek to identify projects that, to the extent possible, balance low project costs with high value propositions (e.g., projects that may involve high value partnerships or facilitate local job creation).

The deployment schedule for associated technologies continues to apply as defined in the 2010 solicitation for Small Generation. Future project solicitations will seek to shorten the initial 24-month project development schedule as APS and project proponents gain additional experience in the program.

APS's experience with the 2009 Small Generation Pilot confirmed the strong interest from renewable resource developers in this market segment. Over 20 developers submitted 45 projects for APS consideration. Importantly, for each project actually submitted in response to an APS solicitation, a greater number of projects are investigated to determine viability before submittal. Those investigations routinely include siting and interconnection questions. For example, in this solicitation, even if only one of every two projects investigated were submitted for APS consideration, APS resources for interconnection and engineering services would still have been required to address each investigated project (a total of 90 projects), along with any supporting inquiries, in the short period before the project bid deadline. The cyclical nature of project development has presented challenges for managing processes and resources to support these renewable development initiatives.

Proposed Wholesale Distribution Interconnection Process Improvements

Commission Staff recommended that utilities can, with Commission approval, assess a tariff or fee for the processing of an interconnection application or for the review time necessary to evaluate the potential safety, reliability, and power quality impacts on the electric distribution system from the interconnection of renewable generation resources.[28] ~~While not included as part of this Plan,~~Based on the Commission Decision[29] on the

[28] Utilities Division Memorandum entitled Interconnection of Distributed Generation Facilities in the Generic Investigation of Distributed Generation, dated June 15, 2007 in Docket No. E-00000A-99-0431.

[29] Decision No. 69674 (June 28, 2007).

subject of interconnecting distributed generation facilities~~Staff's recommendation~~, as well as feedback from stakeholders, APS proposes ~~to evaluate opportunities to develop~~ a process outline and a reasonable ~~tariff~~charge ~~or an increase in a bidder's fee~~ that would ~~could~~ be used systematically ~~to design a means for efficient and responsive process~~to processing ~~of~~ wholesale distribution level interconnection applications, ensure the safe and reliable operation of the electrical system, and improve the development process for these types of renewable energy projects state-wide. ~~Specific proposals for this tariff and its implementation would be the subject of a future filing by APS to the Commission.~~

Under APS's proposed process and fee schedule, wholesale renewable energy developers interconnecting at the distribution level would be able to request three different categories of study work to be completed by APS:

- **Non-FERC Feasibility Study** (analysis open to any potential developer),
- **Non-FERC System Impact Study** (analysis conducted by APS that may be requested by a developer to more thoroughly evaluate interconnection issues, including costs), or
- **Non-FERC Facilities Study** (required study conducted by APS for all projects interconnecting to the APS system to provide a comprehensive analysis of project-specific construction and interconnection issues and costs).

If the developer requests a Non-FERC Feasibility Study, APS will conduct a preliminary review of the potential impacts on the distribution system that will result from the proposed interconnection. This will include a review of the contribution from the proposed generator as well as potential overloading of the distribution system and circuit protection devices. Additionally, this study will provide initial details and ideas on the complexity and likely costs to interconnect and will require the developer to identify the proposed project site location. APS will assess a flat $5,000 fee for a Non-FERC Feasibility Study.

If the developer requests a Non-FERC System Impact Study, APS will conduct a full technical review of the project's impact on the APS distribution system, including power flow, APS system protective device coordination, system protection schemes and voltage drop. This study will inform both APS and the developer if any upgrades to APS's system are needed to build and interconnect the project as designed. APS will assess a $15,000 fee for a Non-FERC System Impact Study.[30]

All projects that plan to interconnect to the APS system will be required to have a Non-FERC Facilities Study completed by APS.[31] APS will conduct a comprehensive analysis

[30] If APS has already completed a Non-FERC Feasibility Study for a developer, the charge for the Non-FERC System Impact Study would be $10,000.

[31] Non-FERC Feasibility Studies and Non-FERC System Impact Studies are not required but would be performed at the request of the developer. However, no project-specific interconnection information will be provided without a formal study and fee.

of the actual construction needed to take place based on the outcome of the engineering study and delineate the detailed costs of construction and milestones. A Non-FERC Facilities Study will require a deposit of $55,000, with the study work billed at an hourly rate and trued up at the conclusion of the study[32].

APS believes that its proposed distribution-level interconnection process outline would identify potential issues with specific renewable projects at earlier stages in the development process. Ultimately, renewable project evaluation would be streamlined by incorporating these processes into APS's procurement efforts, including those proposed in the Small Generation Standard Offer program. All of the proposed fees are intended to cover the costs APS incurs to perform the tasks identified at each of the project development phases. Further, the more formalized process outline and associated fees are designed to help ensure that APS is providing the necessary resources in projects where the developers demonstrate commitment to project execution. All fees will be applied to the RES budget to offset resources necessary to provide these services. APS's proposed process outline seeks to support the identification of the most viable renewable energy projects.

D. Renewable Generation Financing Options

For purposes of resource and budget planning, the financing of costs for RG in 2011 through 2015 will be based on three procurement methods: 1) the Utility Ownership Model, 2) the PPA Model, and 3) the Small Generator Standard Offer.

The costs of RG projects through the utility ownership model are based on the revenue requirements associated with the installations owned by the Company. Under the AZ Sun program, APS is authorized to collect the revenue requirement associated with the installation of the first 50 MW through the RES adjustor until such time as it can be incorporated into base rates or an alternate mechanism. Revenue requirements associated with the second 50 MW will be recovered through a mechanism to be determined in the Company's next rate case.

The cost of renewable energy contracts includes two components: costs associated with comparable generation, which are collected consistent with the accounting rules related to APS's Power Supply Adjustor ("PSA"); and above-market costs of RG, those costs above the cost of comparable conventional generation.[33] For existing contracts, the percentage above APS's cost for comparable generation was established at the time the contract was signed and the percentage is applied to the total contract cost for the planning year. For targeted future contracts, such as those under the Small Generator Standard Offer, the price is estimated based on existing RG contracts, recent market experience, and general trends observed in RG project development. All renewable resource costs are described in terms of dollars per MWh above APS's comparable conventional generation.

[32] APS currently charges $100 per hour for this type of engineering study work. If the developer had a Phase 1 study and/or a Phase 2 study, the $55,000 deposit would be reduced by those fees already paid.

[33] A.A.C. R14-2-1801(K) defines Market Cost of Comparable Conventional Generation.

APS believes it is in the best interest of customers and the Company to ensure that future suppliers of renewable resources compete for the right to supply renewable energy without predicted pricing assumptions or competitively confidential information. Therefore, APS has submitted a redacted version of that confidential information in Exhibit 3C and 3D and will provide Staff the competitively confidential information pursuant to an executed Protective Agreement. It should also be noted that the existing contracts referenced in Exhibits 3C and 3D are long-term commitments that are either already in place or nearly finalized at the date of this Plan.

1. *Utility Ownership Model*

The Commission approved APS's request to recover the revenue requirements associated with the first 50 MW of RG installations owned by the Company, including depreciation, property taxes, income taxes, operating and maintenance expenses and financing costs using the then currently authorized cost of capital, through the RES adjustor.[34] The mechanism to recover costs associated with the remaining 50 MW will be addressed in the Company's next rate case.

Based on requirements of the Settlement Agreement, the Company anticipates it will file two rate case applications to adjust its base rates during this five-year plan period, one to be adjudicated by July 2012 and a second by July 2014. Following each potential rate case adjudication, the Company plans to remove the revenue requirement related to all renewable energy utility owned projects from the RES adjustor mechanism and capture them in APS base rates. Only projects that are installed and operating would receive this treatment as a result of each respective rate case.

2. *Power Purchase Agreements*

APS issued competitive solicitations between 2008 and 2010 seeking additional renewable energy, including distributed resources, with commercial operation dates ranging from 2011 to 2015. APS continues to utilize PPAs to assist the Company in diversifying its portfolio. The competitive procurement processes will continue to consist of, but not be limited to, the issuance of RFPs, negotiated bilateral supply contracts, and other strategies for obtaining long-term renewable resources. Implementing an effective competitive procurement process will ensure a fair and unbiased procedure that will efficiently incorporate a full range of renewable resource alternatives from the marketplace. APS expects to continue engaging the market and seeking cost effective projects over the near term.

In the evaluation of bids submitted during the competitive procurement process, analysis of proposals will include an evaluation of energy production, capacity value, deliverability, technical characteristics, operational performance, reliability, efficiency, credit, financeability, and respondent experience. The procurement and project selection

[34] Decision No. 71502 (March 17, 2010).

procedure employed by APS has been documented and certified by an independent auditor as required by the RES.[35]

3. *Small Generator Standard Offer*

The Small Generator Standard Offer seeks projects ranging from 2 to 15 MW and is open to all renewable technologies. APS's first solicitation for projects under this program was issued on April 27, 2010. Subsequent solicitations under this program will be issued in the first quarters of 2011 and 2012. This first solicitation required proposed projects to be in-service no later than the end of 2012 for solar and wind technologies, and by the end of 2013 for all other resources. The solicitation timeline indicated that APS plans to shortlist the proposed projects by August 26, 2010, select final projects by October 14, 2010, and finalize a contract(s) by the end of the first quarter of 2011. Based on lessons learned from the Company's 2009 Small Generation Pilot, APS has refined its procurement process and has created a standard contract. APS anticipates this Small Generator Standard Offer will result in a final contract(s) within eight months of the issuance of the solicitation.

Exhibit 3A defines the anticipated energy production from the Small Generator Standard Offer while Exhibit 3B defines the program budget. At this time, the Company is committing to spend $10 million annually over the three year program to ultimately achieve approximately 200,000 MWh annually.

APS values a diversified generation portfolio and continues to encourage all RES eligible technologies to participate in current and future solicitations. APS expects a majority of the responses to this solicitation to come from photovoltaic facilities, but the Company may choose to allocate a portion of the overall budget to non-solar technologies and/or emerging, commercially-viable technology innovations depending on the substance of the proposals.

E. Renewable Generation Challenges and Risks

In developing this Plan, APS evaluated renewable resources available for procurement in the near term, as well as those anticipated to become available over the longer term of the five-year period covered by this Plan and beyond.

Assuming that all existing facilities remain operational at their expected level of production and planned facilities develop on schedule and according to their specifications, APS will meet or exceed its RG objectives and its total RES energy targets for 2011. The Company believes that its diversified procurement strategy is a significant factor in ensuring APS acquires the most efficient and cost effective RG resources for its customers. Rather than procuring in fixed

[35] A.A.C. R14-2-1812(B)(6) requires utility compliance reports to include "A description of the procedures for choosing Eligible Renewable Energy Resources and a certification from an independent auditor that those procedures are fair and unbiased and have been appropriately applied." Certification letters were filed as part of the RES Annual Compliance Report filed in Docket No. E-01345A-95-0491, on February 29, 2008, and in Docket No. E-01345A-07-0468 on April 1, 2009.

capacity increments to achieve its renewable energy target, APS has learned through multiple solicitations that allowing the market to guide the Company's procurement strategy is the most cost-effective approach.

During 2009 and the first half of 2010, APS issued multiple competitive solicitations seeking to procure a wide range of RG resources. Responses to these solicitations provided APS with current pricing trends and served as a market indicator as to the appropriate timing to advance specific projects. Based on this strategy, some solicitations resulted in more proposed capacity than what was requested. Bidders submitted lower than anticipated installation and operating costs, possibly reflecting a trend in the industry towards a gradual price decrease in the solar development costs and the broadly maturing Arizona renewable energy markets.

The Company believes that issuing regular solicitations allows for the continued monitoring of market trends and the opportunity to gauge prices in order to determine an optimal time to procure renewable generation when considering the RES targets, the Settlement Agreement objectives, and APS's resource needs. APS will continue this market-driven procurement strategy, as it allows the Company to provide the most cost-effective generation, ultimately benefiting ratepayers in the long term.

F. Renewable Generation Implementation and Administration

The RG program requires subject-matter experts to identify those aspects of RG procurement, engineering, and market analysis that are unique from those same areas in conventional energy operation, and to coordinate with the impacted operational areas of APS to seamlessly integrate renewable resources into APS's standard business practices. The RG administrative team includes personnel with the expertise necessary to manage the program. Program management includes establishing policies and procedures, procuring renewable generation, handling contract administration and construction management, managing benchmarking and resource integration studies, and performing program monitoring and compliance reporting.

As mentioned above, APS plans to add over 1,400,000 MWh by 2015 through the development of projects resulting from the AZ Sun Program, projects to achieve compliance with the Company's Settlement Agreement (online by 2015), the Arizona Wind RFP (2012), a second wind RFP (2015), a PV RFP (2012 - 2013) and the proposed Small Generator Standard Offer (2012 - 2014), as well as three projects under its 2009 Small Generation Pilot Program (2010 - 2011). Facilitation of these solicitations and implementation of these projects require an increase in implementation funding for RG projects throughout the term of this Plan.

There are many APS personnel who support the program but are not part of the administrative team. Those employees are not included in the program costs; they are considered "non-incremental" because they are necessary to support the general operations of the Company and have other responsibilities that are not directly related to the RG program. This support includes, but is not limited to, regulation and pricing, accounting, legal, contract administration, contract settlement, transmission planning, power and gas marketing, and resource planning. As the RG programs expand and diversify, implementation and administrative costs will increase as appropriate.

IV. CUSTOMER SITED ENERGY PROGRAMS

A. Renewable Energy Standard Distributed Energy Requirements and Plan Overview

1. *Requirements and Program History*

The RES requires that APS satisfy a percentage of the annual renewable energy requirement through the addition of DE resources at an increasing interval of deployment. The required DE percentage in 2011 is 25 percent of the total RES requirement, increasing to 30 percent by 2012, and remaining at that threshold through 2025.[36]

Since approval of APS's first RES Implementation Plan in 2008, the Company has gained considerable experience with and understanding of the opportunities and challenges associated with the deployment of DE at the scale required under the RES. Beginning in 2009, the Company has exceeded compliance in its non-residential DE program and has experienced an unprecedented increase in customer participation within the residential DE program, with residential program participation through ~~June~~ October 2010 exceeding the Company's 2010 overall target. APS believes this increase in demand will continue through the near-term. Through this Plan, APS continues to support the non-residential and residential markets beyond DE targets described in the RES at a lower cost than that projected in APS's 2010 Plan. The proposed DE incentive budget and the incentive budget allocation in the 2011 Plan are intended to exceed the residential and non-residential DE target for the full five years of this planning period.

2. *2011-2015 Program Objectives and Initiatives*

APS's Plan forecasts the amount of customer installed generation or energy savings (measured in MWhs) needed to meet the Company's overall DE RES requirement (in 2011, the estimated residential DE RES requirement is 106,633 MWh). APS then calculates the level of incentive dollars required to support that amount of generation or energy savings. Due to the modification in the structure of the residential incentive levels, APS has requested a reduction in the residential funding for 2011 from what was originally forecasted as part of the 2010 Plan filed in October 2009. In order to achieve the residential DE target and accommodate the variables associated with deploying customer-sited DE resources, APS is requesting an incentive budget sufficient to exceed compliance with the RES residential and non-residential DE targets in each year of this Plan.

The assumptions used to build the DE program budget are based on incentives developed as part of the following mechanisms:

[36] A.A.C. R14-2-1805(B).

- Commission Staff's Uniform Credit Purchase Program ("UCPP") working group and APS stakeholder work sessions supporting the development of this Plan;
- Previous year program installations and reservations under APS's Renewable Energy Incentive program ("REIP");
- Project sales and development time frames;
- Variations in the levels of technology maturity; and
- Availability of equipment for installation.

In an effort to meet the residential DE targets with the lowest program cost, the Company has modified its residential incentive program to respond to fluid market conditions, including reductions in module and installed costs. For example, APS observed residential installation costs in early 2009 at approximately $7.15 per watt. At the beginning of 2010, installation costs had dropped below $6.00 per watt and in the weeks following APS's incentive reduction in April 2010,[37] a high volume of applications offered installed costs below $5.00 per watt. Maintaining high levels of customer participation with concurrent reductions in installed costs and incentives demonstrates the need for an incentive design that is guided by market adoption.

Sections 15.5 and 15.6 of the Settlement Agreement required APS to create a new program for public and charter elementary schools and secondary schools, as well as governmental institutions, in the Company's service territory. These tax-exempt customer segments have historically not been cost-competitive in prior incentive funding processes. APS has revised its Schools and Government Program to allow for the easy adoption of solar technologies, with options that would eliminate up-front costs for schools and substantially reduce or eliminate up-front costs for governmental institutions. In April 2010, the Company filed for approval of its Schools and Government Program, and has proposed that this program be approved in conjunction with the Company's 2011 Plan.[38] APS proposes to incorporate its Schools and Government Program into its 2011 Plan budget, and intends that the incentive levels described in this Plan will supersede those that were filed in the Company's previous application. Upon Commission approval of the Schools and Government Program, APS will make any necessary conforming changes within the DEAP.

The 2011 cost for new and existing incentive commitments is estimated to be approximately $~~65.7~~56.8 million. This amount escalates to approximately $~~80~~ 71.7 million in 2012. It is expected that 2012 will be the peak cost year in this five-year planning window, as 2012 is the year the DE requirement reaches its maximum relative to the total RES requirement. After 2012, the increases to the requirement are based on the growth of the overall RES requirement and retail sales increases.

[37] Decision No. 71686 (April 30, 2010).
[38] Docket No. E-01345A-10-0166.

B. Incentive Budgets

The proposed DE incentive budget for the five-year planning window is described in Exhibit 4A and is designed to result in sufficient residential and non-residential DE installations to incrementally exceed the annual RES targets.[39] Annual changes in program budget are designed to accommodate an increase in the DE energy target, both as an increasing fraction of the total RES requirement and as the requirement itself increases based on total APS retail sales.

1. *Up-Front Incentives*

Program Overview

Interest in APS's DE programs has increased over the past year, with the most noticeable gain occurring in the residential sector beginning in the fourth quarter of 2009 and continuing through 2010. APS recognizes that residential customer demand might exceed available funding, as evidenced by 2010 program participation. Therefore, the Company has proposed increasing the residential DE funding beyond that which is necessary to achieve compliance.

At the incentive levels approved as part of the 2010 Plan, residential demand through the first half of 2010 exceeded the incentive budget. APS believes this is strong evidence that incentive levels were no longer aligned with the cost of PV resources. In an effort to preserve funding for residential installations beyond the first half of 2010, APS requested and received approval from the Commission to reduce the residential grid-tied PV incentive from $3.00 per watt to $2.15 per watt for the first three megawatts of reserved capacity, followed by a $0.20 reduction to $1.95 per watt for all subsequent 2010 reservations. Additionally, the Commission approved a reduction from $0.75 to $0.50 per first year kWh savings for residential solar water heaters.[40]

Following the April incentive reduction, APS's queue of residential DE applications continued to grow. Funding Cycle One (March 31, 2010 - July 1, 2010) and Funding Cycle Two (July 2, 2010 - October 1, 2010) available budgets were quickly exhausted and the list of applications set to be reserved in fourth quarter of 2010 increased. APS recognized the strong possibility that by the time the Company's 2011-2015 Plan was approved, the majority of the 2011 residential DE budget could be fully allocated based on the Commission's April decision.[41] To address this concern, APS filed an application seeking clarification on specific DE provisions detailed in Decision No. 71686. As a result of the Company's August application, Commission Decision No. 71913[42] ordered APS to only reserve up to 600 residential grid-tied PV applications against 2011 budget in the fourth quarter of 2010 at $1.95 per watt. Further, consistent with Decision No. 71686, these reservations would not be paid until after January 1, 2011.

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[39] A.A.C. R14-2-1805(D).
[40] Decision No. 71686 (April 30, 2010)
[41] Decision No. 71686 (April 30, 2010)
[42] Issued September 28, 2010.

For 2011, planning models, implementation strategies, and budgeting for the DE programs included in this Plan were all designed with specific consideration for the insight from stakeholder input from APS's continued dialogue with key industry stakeholders and the UCPP working group. This included a series of Implementation Plan development work sessions on key issues, such as the residential incentive program redesign, removal of the 50 percent incentive cap, and the introduction of an incentive budget allocation for non-PV technologies.

2011-2015 Program Modifications

As a result of these discussions, APS proposes the residential PV grid-tied incentive begin at $1.75 with market-driven triggers for future incentive decreases.[43] APS believes the incentive thresholds and proposed method for ongoing incentive reductions are appropriate to meet the residential RES target and support the increased levels of customer participation in the program.

The Company's proposed residential incentive reductions are modeled after modifications made to the Company's 2010 program and include predictable incentive declines based on installed capacity and managed by volume of reservations. The proposed incentive step-downs occur after the reservation of 1,200[44] grid-tied PV applications ("tranche"). APS forecasts each tranche to result in approximately 8 MW of capacity.

Following the reservation of the first tranche at $1.75 per watt, the Company proposes the residential grid-tied PV incentive decrease by $0.15 per watt to $1.60 per watt, reaching $1.45 per watt by the end of 2011. The first three tranches will have step downs of $0.15 per watt, followed by three tranches with $0.10 per watt step-downs in future years. Beyond those six tranches, each additional tranche will step-down $0.05 per watt, as described in the table below. The incentive matrices are incorporated as part of the DEAP (Exhibit B). Also, as a result of the dynamic nature of the declining incentive and the selection of an appropriate fixed incentive level for solar water heaters ("SWH"), the Company no longer feels it is necessary to cap customer incentive payments at 50 percent of the total system cost, or require a minimum of 15 percent customer contribution for SWH, and thereby proposes the elimination of these caps.

Residential PV Incentives 2011 - 2015

Tranche	1	2	3	4	5	6	7	8	9
Incentive Level	$1.75	$1.60	$1.45	$1.30	$1.20	$1.10	$1.00	$0.95	$0.90
Anticipated Cumulative Capacity	8 MW	16 MW	24 MW	32 MW	40 MW	48 MW	56 MW	64 MW	72 MW

[43] This incentive level would begin with the first funding cycle of 2011 (in 2010). See Section 6.2 of the DEAP for Funding Cycle details.

[44] 1,200 applications exclude those reserved through the "rapid reservation" incentive offering.

Anticipated Program Year	2011	2011	2011/2012	2012	2012/2013	2013	2014	2014/2015	2015

All other residential DE technologies will receive the previously planned incentive reduction in 2011. Those planned reductions were designed by the UCPP working group and modified based on program performance in an attempt to reflect the anticipation that DE technologies will decline in cost as market penetration and product availability increase. The proposed 2011 UFI budget for residential DE systems is $34 million.

Further, within each available funding cycle, residential customers will be eligible for a "rapid reservation." "Rapid reservation" incentive requests will not count against the 600 reservation cap per funding cycle. Throughout a funding cycle, APS will confirm all grid-tied PV applications that request $1.00 per watt, effectively foregoing placement in the reservation queue. The Company believes a rapid reservation offering is an important indicator of market pricing, and demonstrates the market's ability to handle future incentive reductions. The Company recognizes that the $1.00 per watt incentive level might need to be re-evaluated and decreased accordingly in future years of the program.

Allowing the market to dictate the timing of incentive level reductions is one component of creating a residential DE program that can sustain year-long participation. In addition, the Company has learned through its non-residential program that the creation of funding cycles is also useful in eliminating peaks and valleys in funding requests, thereby creating a stable incentive market. For this reason, APS will introduce quarterly funding cycles into the residential DE program for grid-tied PV projects. The Funding Cycles are defined in Exhibit B. For the purposes of this Plan, the first Funding Cycle of each Plan year occurs during the final quarter of the preceding calendar year (e.g., Funding Cycle One of 2011 begins in October 2010).

Residential UFIs are available for PV systems up to ~~30~~ 25 kWdc. Residential non-PV technologies are eligible for UFIs up to a total of $50,000 for each installation. Larger residential DE systems may be installed by the customer consistent with other program limitations, but will not be eligible for incentives for the fraction above the UFI incentive limit.

Continuing the Company's 2010 non-residential UFI strategy, the Company proposes an annual funding of $2 million, equally divided into bi-monthly funding cycles and awarded to the projects with the lowest score as determined by the ranking calculator described in the DEAP. Non-residential UFIs were developed for technologies where the ~~average project is less than 30 kW or the~~ average project size results in a total incentive less than or equal to $~~50~~75,000.

2. *Production Based Incentives*

As part of this Plan, APS continues its expansion of its non-residential DE program around an annually increasing lifetime PBI authorization. Specifically, in each year of the Plan, APS proposes new lifetime PBI commitments of $100 million for non-

residential DE projects. This reflects the approach approved by the Commission in APS's 2010 Plan.[45] APS anticipates that the increased funding under the lifetime PBI commitment will result in a growing number of increasingly cost-effective customer DE installations.

Projects resulting from the DE RFP are substantially the same as commitments under the PBI program and, as a result, the Company includes those commitments in its calculation of lifetime PBI authorization. In 2011, the lifetime PBI authorization necessary to implement the non-residential PBI projects as described in this Plan is $670 million. Details of the requested PBI lifetime commitment authorization for all of the years described in this Plan are included in Exhibit 4C.

With specific experience from APS's REIP and based upon dialogue with customers and other stakeholders,[46] the expanded non-residential program will allocate the annual $100 million increase in the lifetime PBI to two areas: $73 million for large and medium projects and $27 million for the Schools and Government Program as defined in Section IV.F of this Plan. Of the $73 million available for large and medium projects, $18 million will be split equally among the funding cycles for medium projects and the remaining $55 million will be split equally among the large project funding cycles.

The increased lifetime PBI commitment authorization is accompanied by a forecast of the annual funding requirement necessary to meet incentive payments resulting from the energy produced in each budget year. Based on the Company's improved understanding of when commercial projects become operational relative to the close of each nomination period, APS has modified its methodology for projecting when it will be required to make payments on Production Based Incentives ("PBIs") commitments. Currently, APS uses a mid-year convention that anticipates that half of the PBI projects are online by mid-year. However, the Company has come to realize that the full development cycle for PBI projects demands a longer timeline, and it is generally not feasible for large non-residential projects to be completed in a three-month period. Within the PBI program, the large project category represents the greatest total financial commitment in any given year. The new methodology assumes that new commitments will be counted within six to nine months following the close of each nomination period for large projects, and six months following the close for each nomination period for medium projects. As a result, the portion of the PBI budget for new commitments has been reduced by $9.5 million. The annual funding required for DE Incentives is included in Exhibit 4A. Exhibit 4A(i) presents the budget differential between the Company's Implementation Plan filing in July 2010 and this revised filing. In addition, the detailed interaction between annual funding, payment intervals, and the lifetime PBI commitment authorization is included in Exhibits 4C and 4C(i).

[45] Decision No. 71459 (January 29, 2010).

[46] On June 9, 2009, APS held a 2010 Renewable Energy Standard Implementation Plan stakeholder meeting focused on the status of the non-residential DE program. APS informed stakeholders that participation in the non-residential program had exceeded expectations, which presented challenges for the Company in the acceptance of PBI reservations under the existing Commission approved lifetime PBI commitment authorization of $77 million. Options to reduce costs without diluting the amount of distributed renewable energy generated were discussed with stakeholders. APS is using stakeholder input to further refine its DE program.

Within the last year, APS's non-residential DE program has experienced a significant increase in the volume of application requests for incentive funding for various DE technologies. The program continues to benefit from a competitive process to reduce the cost of incentives, which has contributed to driving market prices down. This growth in participation has prompted the Company to collaborate with stakeholders to revise the program contract and incentive offerings, and develop enhanced programs for technologies and customers that have historically limited participation in the programs.

Elimination of the 10/20 PBI

Based on Commission direction, APS has collaborated with stakeholders to evaluate the market need for a 10-year incentive payment with a 20-year renewable energy Credit Purchase Agreement ("10/20"). Through these discussions, it was determined that the market is best served by three other PBI agreements and that the 10/20 offering is no longer necessary. Accordingly, APS is requesting to eliminate the 10/20 PBI offering. The 10/20 offering was initially designed to encourage program participation within market sectors where program adoption was slow, and was desirable to DE developers because it provided a quicker, though not always stronger, return on investment. The 10/20 offering has fulfilled its function and program participation has increased. Because the initial function of the 10/20 offering has been satisfied, the risks associated with "mis-matched" terms and production defaults are no longer warranted as part of APS's incentive program.

In response to stakeholder feedback, t~~T~~he Company is proposing to offer a new 15 year agreement for non-residential SWH, ~~and~~ solar space heating and solar space cooling. Beginning in 2011, this unique 15 year offer will have many of the same benefits of the 10/20 agreement, which was identified to have important elements for solar thermal technologies, while eliminating risks associated with mis-matched terms. Through discussions with stakeholders, the Company believes the modified 15 year offering will continue to facilitate contracts while reducing ratepayer risk. Details regarding this incentive structure can be found in Exhibit 1 of the DEAP.

Facility Category and Program Cap Modifications

In the Company's 2010 program, APS observed a greater percentage of medium sized projects receiving funding than large sized projects received. In an effort to more equally allocate funding, the Company has proposed increasing the medium project category to include any electricity producing project whose inverter(s) or generator(s) is rated 200 kWac or less. By increasing the inverter and generator ratings to 200 kWac, APS expects to shift projects from the large category into the medium category and provide for more continuity across project sizes and funding intervals. All eligible projects will be required to conform to the provisions of the APS DEAP. A limited number of modifications have been made to accommodate the goal of increasing competition among Large and Medium project incentive funding, and thereby reduce incentive costs.

Additionally, based on feedback provided by stakeholders at work sessions conducted by APS in advance of the filing of this Plan, the Company proposes the elimination of the 60 percent cap on incentives as it is no longer a necessary tool to limit the amount of funds one project may collect. The cap originally served as a tool to allow for broader disbursement of funds and was aligned with project economics. However, the competitive nature of APS's current program continues to drive down the cost of incentives at a rapid pace, and the 60 percent cap no longer clearly distinguishes project economics.

3. *Budget Assumptions and Flexibility*

In developing anticipated program outcomes, APS made a number of informed decisions about technologies and customer preferences. These decisions included the anticipated number of projects by technology and the anticipated energy contribution from each DE project. Energy contribution was described by assumptions about average project size and average project production. These detailed assumptions are required for purposes of budget and planning; they are not intended to reflect allocations, funding authorization, or preference for any one technology.

In the event that funds collected for use in the DE incentive program are not fully subscribed in a program year, those funds will be applied to the next program year. To continue to adapt to customer demand and market changes, APS will continue to implement the incentive budget flexibility granted in Decision No. 70313 (April 28, 2008). In that Decision, APS was granted the ability to reallocate up to 20 percent of the incentive budget to meet customer demand.

C. Residential Customer Program Enhancements

As part of this plan, APS will further develop and expand three key components of its residential DE program to better meet market needs and assist in sustaining year-long participation in a predictable manner. First, APS will create an incentive funding allocation within the residential DE program for all eligible residential technologies, excluding grid-tied PV. Second, APS will revise the APS Energy Star plus Solar Homes requirements and benefits to better meet the unique needs of the home builder market segment while capitalizing on the market growth of new home construction. Finally, APS will introduce a solar water heating financing solution through the APS Home Performance with Energy Star program.

1. *Non-Photovoltaic Funding Allocation*

As required by the Commission during the incentive redesign in 2010, APS is introducing an allocation, or "carve-out", in the residential budget for all eligible DE technologies that are not grid-tied PV. APS will set-aside $6 million of the residential incentive budget to be used exclusively for all other eligible DE technologies and incentives will be distributed on a first-come, first-reserved basis. These DE technologies will not be subject to funding cycles. This carve-out is designed to facilitate diversity in renewable energy adoption. The remaining $28 million will be allocated for residential grid-tied PV

projects and will be awarded based on the funding cycles previously described in this document.

2. *Energy Star plus Solar Homes Program*

Parallel to retrofit market growth, APS is experiencing increased DE program participation within the production and custom homebuilder market in the APS Energy Star plus Solar Homes program. Aggressive marketing efforts coupled with strong marketing incentives enabled this program to gain momentum even within Arizona's struggling new home market. The first year of the program attracted six builders, including two of the top ten builders in the nation, to incorporate solar technologies on at least fifty percent of the homes in their new communities within APS's service territory.

During the first year of the Energy Star plus Solar Homes Program, APS gained insight into the nuances of incorporating solar in new construction for custom and production home builders. Insights included incentive amount predictability over the developments construction timeframe, extended incentive reservation periods, and the marketability of "solar ready." These nuances prompted the proposed revisions to the APS Energy Star plus Solar Homes program in an effort to better meet the specific and unique procurement needs of the Energy Star home builder market. These revisions include extended reservation periods, annual incentive reductions unique to home builders, and additional marketing support for commitments beyond the baseline Energy Star plus Solar Homes program requirements.

The proposed enhancements to the Energy Star plus Solar Homes Program will provide financial incentives and longer reservation periods to encourage the installation of eligible renewable energy systems on new residential construction. The incentive levels, which are outlined in the table below, will be stepped-down annually and builder reservations will remain active for twelve months before expiration. The annual incentive step-down is an effort to better provide home builders with predictability in incentive amounts and to maintain general alignment with broader incentive declines seen throughout APS's programs.

Energy Star plus Solar Homes
PV Incentives

Program Year	2011	2012	2013	2014	2015
PV Incentive Level	$1.95/watt	$1.45/watt	$1.20/watt	$1.05/watt	$0.95/watt

In addition, APS will offer three tiers of builder incentives in the APS Energy Star plus Solar Homes program:

1. Energy Star builders committing up to ~~10~~ 25 percent of their annual home closings within a participating subdivision are eligible for the previously mentioned builder PV incentive levels and twelve month reservation periods.

2. Energy Star builders committing up to 50 percent of their annual home closings within a participating subdivision are eligible for the previously mentioned builder PV incentive levels, twelve month reservation periods, and marketing incentives to assist with up to a 3 kW PV or SWH system for a model home.
3. Energy Star builders committing 50 percent or greater of their annual home closings within a participating subdivision are eligible for the previously mentioned builder PV incentive levels, twelve month reservation periods, marketing incentives to assist with up to a 3 kW PV or a SWH system for a model home, and a marketing incentive for each home installed with PV or SWH.

Additionally, APS encourages all builders to continue to build solar-ready communities, as defined in the 2010 APS Energy Star plus Solar Homes program, and builders will be compensated for all homes that are built solar-ready for PV or SWH.

The Energy Star plus Solar Homes program seeks to achieve over 500 DE installations, with over one megawatt of grid-tied PV installations. APS anticipates that over 2,700 solar-equipped and solar-ready homes will be built by 2013 as a result of the home builder program.

3. *Solar Water Heating Financing*

As a part of APS's Residential Energy Efficiency Financing ("REEF") program, an offering through APS's Home Performance with Energy Star program, residential customers will have access to solar water heating financing.[47] APS has partnered with National Bank of Arizona to offer customers financing for energy efficiency and solar water heating installations. APS believes this offer fills a void in the market, as there are few solar water heating financing solutions available due to the relatively low out-of-pocket costs associated with the procurement of solar water heating systems. APS anticipates over three hundred customers will have access to this program to secure financing for solar water heating as part of a whole house energy efficiency project.

[47] The REEF program was filed on February 26, 2010 and is pending approval from the Commission in Docket No. E-01345A-08-0172.

D. Non-Residential Customer Program Enhancements

The success of APS's non-residential DE program in 2010, coupled with the success of the DE RFP, has resulted in commitments for non-residential DE resources beyond the RES targets. As part of this Plan, APS proposes a continued expansion of the non-residential DE program through the following components: 1) annual increases to the lifetime PBI authorization, 2) the continued deployment of projects resulting from the Company's DE RFP, and 3) partnering with the Department of Energy to assist with the deployment of solar on low-income, multi-family housing facilities. This commitment will require APS to match the Department of Energy's American Recovery and Reinvestment Act ("ARRA") funding with incentives in the amount of $1.2 million.

It is important to note that the Distributed Public Assistance Program ("DPAP") program approved in the Company's 2010 Plan has been renamed the Energy Assistance for Renewable Neighborhoods ("EARN") Program.

1. *Distributed Energy Request for Proposal*

APS executed two contracts and one agreement in early 2010 as a result of the Company's DE RFP for approximately 150,000 MWh annually. This total represents a little more than one-quarter of APS's non-residential DE requirement in 2015. Of the approved $250 million lifetime commitment budgeted for the DE RFP, the signed contracts resulted in a total of $225 million lifetime commitment.

In aggregate, when compared to the current cost of the non-residential DE program, the results of the DE RFP are projected to reduce program costs for RECs by approximately 50 percent.

2. *Department of Energy Partnership*

On May 12, 2009, the Arizona Department of Commerce Energy Office filed an ARRA State Energy Program application to the Department of Energy ("DOE"). The State Energy Office plan requested more than $55 million to fund six projects, including $10 million for Arizona's utilities for DE Leadership Projects. The DOE notified the State Energy Office that their projects had been funded on June 23, 2009. APS's portion of the Utility DE Leadership Project is $3.68 million.

With this funding, APS will target non-profits, municipalities, and low income participants. APS is proposing a budget of $1.2 million in this Plan to match the ARRA funding received from the State Energy Office in an effort to maximize the number of projects for the abovementioned market segments.

E. Powerful Communities - Wholesale Distributed Energy Feed-In Tariff

APS is proposing a wholesale DE FIT program named "Powerful Communities". APS's Powerful Communities program targets market segments that currently have a more difficult

time accessing incentive funding though the current APS portfolio of RES programs; specifically low-income housing authorities, homeowner associations, multi-tenant facilities (residential and commercial), and not-for-profit charitable organizations. Resources eligible through this program are limited to renewable facilities between 30 kW and 200 kW, and the facility must be operational within 12 months of acceptance into the program. APS believes projects resulting from this program meet the definition of wholesale DE resources described in the RES rules.[48]

As proposed in this Plan, the Powerful Communities program will accept eligible projects on a first-come, first-serve basis during the three-year deployment period of 2011 to 2013. Participation is limited to 2 MW of eligible projects in each year of the program, for a cumulative program resource capacity total of 6 MW. Each project will qualify for only one DE incentive program, regardless of technology type. The Company is proposing a standard fixed price offer for the Powerful Communities program of $0.195 per kWh for the output of the system under a 20-year standardized agreement. The estimated annual cost of the program is $375,000, and the lifetime program commitment is approximately $22.5 million.

F. Schools and Government Program

In a separate application before the Commission, APS has proposed a new program for schools and governmental institutions as part of its DE program expansion.[49] The proposed Schools and Government Program offers schools on-site solar energy while eliminating up-front customer cost, and substantially reduces or eliminates up-front costs for governmental institutions.

Incorporating stakeholder feedback from various workshops conducted by APS, the 15 year contract that was originally proposed in the Company's application for the new Schools and Government Program has been modified to provide a stronger financial return that is closely aligned with the 10/20 offering that is not included in the program. The modified 15 year contract incentive levels are included in Exhibit 1 of the DEAP.

G. Community Power Project – Flagstaff Pilot

The Community Power Project - Flagstaff Pilot ("Community Power Project") was approved by the Commission on April 1, 2010.[50] Through the Community Power Project, APS will install up to 1.5 MW of distributed renewable energy systems. Full deployment is expected to be complete by December 2011. APS will maintain ownership of all facilities, with the exception of the solar hot water heaters, which will be provided to low-income customers who will own the systems.

As described in previous implementation plans, this program will initially be funded with RES rollover funds from previous budget years. Revenue requirements associated with APS's capital expenditures for installations deployed through the program will initially be funded through the RES adjustor. However, at the time of the Company's next rate case these capital expenditures would be incorporated into the Company's rate base.

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[48] A.A.C. R14-2-1805 (E).
[49] Docket No. E-01345A-10-0166.
[50] Decision No. 71646 (April 14, 2010).

H. Innovative Renewable Energy Projects

APS's DE RFP was designed to identify projects and strategies that will increase certainty of compliance with APS's RES DE targets, reduce the cost of DE incentives, and work to identify opportunities for program innovation. In requesting authorization for the resultant projects, APS forecast a lifetime contract commitment of $250 million. Following negotiations and final contract execution, APS committed $225 million towards all projects selected through the solicitation process.

APS seeks to continue the theme introduced by the 2008 initiative, while adjusting the designed outcome for 2011. Specifically, APS programs have sought to drive incentive costs down within the DE market segment. While this objective is squarely aligned with customer interest, it does not readily facilitate the installation of commercial technologies that are not specifically cost optimized for the DE market. For example, building integrated PV technologies present great long-term opportunities for Arizona homes and businesses, yet they are rarely cost competitive with traditional PV panel installations. Likewise, PV panels can be installed in innovative configurations that produce a wide array of site specific and potential community benefits, but again typically result in high per kWh installed cost.

Through the Innovative Renewable Energy Projects initiative, APS will seek to procure renewable resource installations designed to demonstrate innovative deployment opportunities and innovative technologies. The Company proposes to execute this program with the balance of the $25 million remaining from the approved lifetime commitment authorization for the DE RFP. Inasmuch as these projects are used to serve a specific customer, their energy will be applied to the appropriate DE target.[51] If the resulting resources are not categorized as DE, their output will be applied to the overall APS renewable energy target.

I. Marketing, Advertising and Partnership Development

APS's marketing efforts for 2011 will build on the 2010 marketing activities and will continue to advance several primary goals including:

1. Creating an increased awareness of the APS REIP available to customers;
2. Driving customer participation in the program by delivering relevant, motivational messaging about the APS REIP;
3. Promoting and developing consumer education and educational curriculum to communicate the benefits of supporting and adopting RE; and
4. Continuing to enhance customer experience with the decision-making and purchase process through APS's efforts (e.g., refining the application, decision-making, and tools) and those of the Company's stakeholder partners (e.g., QSI training).

The key marketing objectives for 2011 are to:

1) Heighten awareness and build acceptance among APS's customer base of distributed renewable energy technology;

[51] A.A.C. R14-2-1805.

2) Help customers recognize the ability of DE to meet their individual energy goals as well as those of Arizona; and
3) Support customers and encourage them to action through taking advantage of available renewable energy incentives.

To accomplish these objectives, APS's marketing strategy incorporates a combination of compelling messages, critical program partners, community outreach, and an effective and convincing use of media, both placed and earned.

To accomplish these program goals, APS's marketing strategies and tactics include the following:

- Identify, evaluate and refine messages to address adoption barriers for residential customers, builders, and commercial customers.
- Implement a media plan that includes mass and social media to raise awareness of renewable DE alternatives and motivate APS customers to adopt those technologies.
- Continue to use and refine direct marketing to motivate APS's customers to adopt DE solutions.
- Continue to educate customers about DE through events, seminars, workshops, and the APS website.
- Optimize the APS website as an information resource for customers, installers and other stakeholders. Leverage ongoing opportunities to enhance the website based on customer and stakeholder feedback.
- Partner with all ACC-regulated electric utilities on the *Arizona Goes Solar* website.
- Leverage online advertising and communications. Look for opportunities to incorporate social media tactics into the marketing mix.
- Create sales tools and marketing materials to support both residential and non-residential customer acquisition.
- Develop marketing efforts to create awareness of APS's partnerships with home builders (Solar Homes Program) and the benefits of purchasing a new home with solar.
- Sustain category growth by supporting participants in APS's QSI Program through APS's training program, referral process and co-operative advertising.
- Enhance interest and awareness in residential DE by working within communities and extending the reach of APS's marketing efforts.
- Partner with lending institutions to create programs that will help customers overcome obstacles with up-front financing.
- Sustain growth in RE adoption by educating customers on programs that reduce the upfront acquisition cost of DE (e.g., Community Power Project – Flagstaff Pilot, lease options).
- Develop a comprehensive program to promote participation in APS's Schools and Government Program.

1. *Key Marketing Initiatives for 2011*

The key marketing initiatives in 2011 will focus on driving the adoption of DE solutions among APS's customer base. These initiatives will incorporate efforts that help drive awareness of renewable energy solutions, and will include several programs and tools that enhance customers' experience with the renewable energy purchase process.

- Advertising – APS has experienced unprecedented participation levels in its REIP in 2010. The number of residential RE installations increased by over 250 percent for the time period of January 2010 through May 2010 compared to the same period in 2009. Despite this success, the Company still needs to continue aggressively promoting the adoption of DE technologies through advertising to help bring DE into mainstream customers' consideration set as they are making energy purchase decisions. The advertising will continue to heighten awareness of the key benefits of renewable energy and will reinforce the affordability given the various purchase and lease options available in the marketplace.

- *Arizona Goes Solar* Website – APS ~~has been~~was instrumental in the effort to design and ~~implement~~ develop the *Arizona Goes Solar* website,[52] ~~expected to go online in August 2010~~which was launched September 1, 2010. The Company will continue to play a leadership role in the evolution of the site in terms of its structure, content, and functionality. Additionally, APS will continue to explore ways in which traffic can be driven to the site given that it represents a unique educational forum for its customers.

- APS Website - APS will continue to refine the overall aps.com website and the renewable energy section of the site to educate customers. This effort will include expansion of customers' ability to conduct business with APS on the site. For example, residential customers were first able to submit reservation applications online in 2010. The website will be expanded to include additional functionality, such as the ability to track a reservation throughout the process and inclusion of other customer and reservation types. Further, APS plans to deploy a solar calculator in late 2010 that will provide customers with an indication of system cost, savings potential and resultant payback. In addition, based on market research on site usability, APS will continue to update site content to ensure that it satisfies customers' needs and that the information provided is presented in a way that is clear and understandable.

- Qualified Solar Installer ("QSI") Program – APS will continue to grow its base of QSIs by aggressively promoting the program to customers and the industry. Through the QSI Program, APS seeks to create a more satisfying purchase, installation, and ownership experience for its customers. One of the most challenging aspects for a customer installing renewable energy is the selection of a dealer or installer; referrals

[52] Decision No. 71459 (January 29, 2010) required APS to participate in the creation of a new "Go Solar Arizona" website. Upon further research, it was determined that the Go Solar Arizona domain name was not available, and participating utilities agreed to name the website "Arizona Goes Solar."

that will be available to customers both on APS's website and through the call center will minimize this challenge. Participating solar installers will reap several benefits from the program, including increased industry expertise from the QSI training, additional business opportunities from the referrals, and the ability to off-set their advertising cost through participation in APS's co-op advertising.

- High Visibility Customer Outreach Initiatives – APS will identify opportunities to participate in projects with high customer and public visibility to increase the awareness and real-world applications of renewable energy. Possible programs would include those that provide opportunities for public interaction with renewable technologies, demonstrate innovative uses of renewable technologies in built environments (e.g. retail areas, pedestrian thoroughfares, etc.), and/or integrate educational information related to renewable energy in dynamic learning environments (e.g. new communication channels, demonstration projects, etc.). Through these initiatives, APS seeks to improve the awareness and perceived viability of renewable technologies in an effort to increase customer participation in renewable energy solutions for their own homes and businesses.

- Arizona SmartPower – APS will continue to partner with SmartPower on several key initiatives. Arizona SmartPower will play a significant role in helping customers understand the various renewable energy options that exist in the marketplace. For example, customers have various solar product and financing solutions. Arizona SmartPower will provide an independent third-party review for customers, thus facilitating an informed decision-making process.

APS will continue to review the effectiveness of its marketing efforts and the associated marketing budget throughout the year and into the future. Modifications to APS's marketing strategies, tactics, and budget will be made to address changing market conditions and key lessons learned throughout the marketing process. The proposed annual marketing budget for 2011 to 2015 is detailed in Exhibit 2A.

J. Implementation and Administration for the Distributed Energy Program

The implementation strategy for the DE program was developed with the following targets:

- Developing an accurate, efficient and customer friendly process;
- Integrating the program processes into general business operations;
- Creating a scalable process that responds to adjustments in the volume of program participation; and
- Supporting the strategic marketing efforts of the program.

Accomplishing these objectives requires a considerable investment in program implementation. The DE program requires a substantial number of individual transactions and each transaction impacts numerous parts of APS's business infrastructure. The administrative tasks continue to increase as the existing customer base grows and complexities to the incentive program are introduced. As such, implementation costs for the DE programs are significant.

1. *Program Resources*

The implementation team is comprised of the personnel necessary to execute the DE incentive program. This team includes the fixed payroll personnel who are required to administer the reservation and interconnection applications and agreements, review system design for conformance with DEAP and interconnection requirements, process incentive payments, answer customer and installer questions about the program, and perform field inspections. Also included are variable payroll personnel required to tag utility equipment to identify potential backfeed sources and provide billing support to partial-requirements customers, as well as the personnel required to manage the execution of the DE program, develop and execute the marketing and advertising programs, and provide ongoing program monitoring and compliance reporting. The number of implementation team members required is directly related to the number of program participants.

There are also resources supporting the program that are neither part of the administrative nor the implementation teams. These personnel are considered "non-incremental" and are required to support the general operations of the utility and have responsibilities that are not directly related to the distributed program. These resources include but are not limited to personnel from regulation and pricing, accounting, legal, contract administration, and meter reading departments.

2. *Material Costs*

Measuring the actual number of kWh returned to the grid by DE resources requires the use of a bi-directional meter rather than a standard utility meter. The incremental cost charged to the RES is the difference in cost between the bi-directional meter and the standard utility meter.

For compliance verification and program evaluation purposes, the DEAP proposes to capture monthly meter reads for DE systems generating electricity. APS believes that customers will also be interested in the ability to track total kWh generated by their system. To facilitate both the meter read capture requirement and to help customers track the kWh production by the DE system, APS may install and read the system meter for participants in the program. The only costs charged to the RES are those costs associated with providing the second meter to record system production.

There are also incidental incremental material costs associated with the program including, but not limited to, system locks, tags, inspection tools, and transportation for inspection personnel.

APS may also install an interval recording meter on a sampling of sites. That data will be used to conduct studies on the coincidence of solar output as compared to APS's system load. The only material cost charged to the Program will be the incremental costs of the interval recording meter.

3. *Technological Improvements Required*

APS continues to review the existing process flows in order to ensure the effective and efficient use of resources required to implement the DE incentive program. These processes require integration with existing systems, including customer billing, the APS website, program and operations databases, accounting systems, and dispatch and scheduling tools. APS's 2010 Plan advanced several such projects that will facilitate additional efforts to further integrate RES programs and expand opportunities to offer streamlined interfaces for customers and stakeholders.

APS also continues the development of cost effective user-friendly tools for customers to determine the opportunity and benefits presented by solar systems. Based on the Company's experience to date, a customer who is considering investing in a renewable energy system for a home or business wants to know the financial benefits of such an investment, including both potential systems costs and impacts on monthly bills.

Leveraging the centralized database, APS is developing mapping tools which will facilitate the integration of DE solar installations into distribution asset managing, engineering, operations and maintenance infrastructure. This integration will support more comprehensive planning, engineering and operation of the distribution system.

In addition, APS continues work in the following areas:

- Database Integration: APS implemented IS projects that combine a number of individual databases into one centralized system. The consolidation helps ensure data accuracy, security, and consistency, as well as increasing overall processing and reporting efficiencies. This consolidation is designed to facilitate program customer support throughout APS's operation, including options for reservation status reporting (see below) and DE system reporting integration with customer billing.
- Interactive Web-based Project Tracking Application: Database integration will facilitate web-based project tracking milestones, for both contractors and customers, and will include an automated correspondence/payment processing feature. Both of these elements will improve processing time, ensure consistency and completeness of information, and reduce reservation coordinator processing time.
- Renewable Website: APS is in the process of launching a newly redesigned Renewable website. The updated website is designed to cater to four different customer sectors: residential customers, businesses, contractors, and builders. The site will include an increased use of video applications, customer testimonials, and sector-specific information with the aim of providing information necessary to drive customer participation in renewable energy programs.

APS will continue to make incremental improvements to this program, which will enable the Company to continue its progress in the implementation of technology improvements.

V. RENEWABLE RESEARCH, DEVELOPMENT, COMMERCIALIZATION AND INTEGRATION

APS proposes a budget allocation for RCD&I of renewable resources in its Plan. The purpose of this allocation is to enhance and accelerate the development, deployment, commercialization, and utilization of renewable resources for the benefit of APS customers. For 2011, APS proposes to specifically allocate a minimum of $500,000 of the total RDC&I budget of $2.0 million for research and development aimed at advancing the role of renewable energy in APS's resource mix. APS will prioritize projects and project funding to meet RES goals for renewable resources. Activities undertaken as part of this program are supported either solely by APS or in partnership with other organizations and entities including private industry, public research institutions, and government laboratories.

A. Research and Development

APS's commitments in 2011 for Research and Development will continue to include AzSMART in collaboration with Arizona State University. AzSMART is an analysis system tailored to examine the successful roll-out of a solar energy infrastructure in Arizona and to develop the required electric grid technologies which will enable such a solar infrastructure. The analysis system, which will leverage ASU's Decision Theater, will be able to evaluate the total effects of the introduction of significant levels of solar power generation in Arizona. The 2011 plan year will be the third of a three year commitment for this project.

In 2011, APS is planning to leverage research and development funds to support activities in specific areas such as energy storage, solar intermittency and variability and renewable technologies. APS will leverage its relationships with Arizona Universities and will solicit proposals from these schools to support research projects in these areas.

APS initiated an effort in 2010 to work with Northern Arizona University to record and analyze data collected through a broader PV Variability Study being conducted at the Company's Prescott Solar Generation site. This data collection and assessment will be coordinated with other available weather and solar data collections to further address the value and impacts of distributed and large scale solar generation.

B. Commercialization and Integration

APS continues to plan and develop commercialization and integration studies which provide direct value in planning the future direction of renewable energy. Some of those studies have identified opportunities for additional investigation, while others have provided direct benefit for the effective integration of renewable resources. In determining whether to fund new RDCI projects, APS will consider key functional areas including:

1. *Renewable Technologies*

This functional area includes such projects as studies of the attributes, characteristics, and costs of renewable energy technologies and the availability and viability of renewable energy resources in the state of Arizona and the Southwestern United States. Additionally, APS plans on continuing its ongoing efforts to address the values and impacts of the integration of renewable technologies into the utility's distribution, transmission, generation and resource planning design.

2. *Energy Storage*

APS's technical staff is currently planning and developing a distribution level energy storage project to provide APS a better understanding of the issues encountered when operating and controlling an energy storage system connected to the APS grid. APS views this project as one for demonstration and study purposes, and plans to study the abilities of Energy Storage Systems to address the following areas of focus: reducing the effect of short-term variability issues associated with Solar PV generation by providing a means of regulation, providing the ability to store and shift energy delivery to help make the load profile more constant, and to develop a deeper understanding of the cost, control and system opportunities with energy storage.

3. *Solar Integration Cost Study / Solar Variability and Intermittency*

In 2011, APS plans to study the integration costs of solar resources on the APS system. This study would provide APS with a better understanding of the positive benefits of solar resources to the utility system such as cost effective energy and long-term price stability, and will address the unique generating characteristics of solar resources as compared to conventional utility resources. This work will be based upon data acquired during a solar variability data acquisition project initiated in 2010.

4. *High Penetrations of Distributed Resources and Impacts on the Distribution System*

APS will continue to support studies that seek to develop a better understanding of the operational impacts, integration and interconnection issues, and strategic opportunities for distributed resources. Specific areas of study may include investigation of specific attributes of distributed resources including DE performance, reliability, monitoring, energy and storage dispatch, weather forecasting, and the interface between DE and the smart grid. This work will support the DOE funding grant that was awarded to APS in 2010 along with additional ancillary study projects around the Flagstaff Community Power Project and its distribution systems.

VI. COSTS OF THE 2011 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN

The cost of the APS Plan is comprised of three key cost segments: RG, DE, and RDC&I. A summary of the costs of those segments and the major components for each segment is included in Exhibit 2A. APS currently estimates the cost to comply with the RES to range between $~~96.4~~92.5 million[~~53~~] in 2011 to $~~193~~ 170.0 million in 2015, with a five-year total of $~~738.3~~ 658.0 million. Annual increases are driven mainly by annually increasing energy targets. As noted in Exhibit 2A, APS would anticipate that some funds collected in 2010 may not be spent or committed and will be available in 2011. At the time of this filing, APS cannot accurately predict the amount of uncommitted funds that may be available. The Company will provide an estimate of that information by November 1, 2010 or before the date of the Open Meeting to adopt this Plan, whichever is earlier.

RES funding is intended to cover the cost of utility-scale renewable generation in excess of the cost of conventional resource alternatives, incentive payments for DE resources, marketing expenses, and program implementation and administration costs. The costs for renewable generation are based on APS's most current insights into that market. The costs for DE incentives and the program budget are based on incentives developed as part of both Commission and APS hosted stakeholder workshops, and include APS's best estimates of market uptake for the various technologies available to consumers.

It is important to note that the total cost of renewable energy generation is not entirely reflected within the RES. The cost associated with a renewable PPA contract is collected through two rate mechanisms: the PSA and the RES adjustor. After a renewable PPA is executed, the portion of total cost that is comparable to conventional generation cost (the "at market" cost) is collected through the PSA, while the "above market" portion is collected through the RES adjustor. The costs that are reflected in the RES Implementation Plan represent only the "above market" costs. Therefore, the cost recovered through the RES adjustor represents only a fraction of total contract cost. As an example, in 2011 the gross total costs for renewable generation PPAs are estimated to be just over $51 million. The RES recovers $9.9~~8.6~~ million dollars of these expenses. The remainder of those expenses are collected through the Company's PSA mechanism.

At this time, APS is requesting adjustor funding of $~~90.4~~86.5 million for 2011 (the currently effective RES adjustor would generate approximately $80.7 million on an annualized basis). The requested adjustor amount, along with the $6 million already included in base rates, equals the $~~96.4~~92.5 million of funding needed to meet the requirement. APS intends to request additional funding in each successive year of the Plan for the following calendar year's estimated cost. The estimates for Plan years 2011 to 2015, contained in Exhibit 2A, will be updated each year to determine the necessary level of RES funding from customers.

[~~53~~] ~~The total cost of $97.3 million does not include the $3.2 million rollover funds from 2009.~~

EXHIBIT F

EXHIBIT F

Arizona Public Service Company

Arizona Public Service Distributed Energy Administration Plan

~~July 1~~October 13, 2010

EXHIBIT F

TABLE OF CONTENTS

EXHIBIT F

TABLE OF CONTENTS

EXHIBIT F

ATTACHED EXHIBITS

Exhibit 1	Distributed Energy Incentives
Exhibit 2	Solar Space Heating Incentive Calculator
Exhibit 3	Standard Project Ranking Calculators
Exhibit 4	PV Off-Angle and Shading Adjustment Table

EXHIBIT F

ARIZONA PUBLIC SERVICE CORPORATION
2010 DISTRIBUTED ENERGY ADMINISTRATION PLAN

1. OVERVIEW

APS is submitting this updated Distributed Energy Administration Plan ("DEAP" or "Plan") to the Arizona Corporation Commission ("Commission" or "ACC") as part of its 2011 Implementation Plan. APS has made only minor adjustments to the DEAP that was approved as part of the Company's 2010 Renewable Eenergy Standard ("RES") Implementation Plan.[1]

The RES requires that a portion of the renewable energy requirements be obtained from distributed energy ("DE"), and that the installed resources result from residential systems and non-residential systems in equal proportions. As part of its RES Implementation Plan, APS describes the installation of DE systems as facilitated by providing customers with financial incentives for the installation of those resources through APS's Renewable Energy Incentive Program ("REIP").

Commission Staff initiated the Uniform Credit Purchase Program ("UCPP") working group in June 2006, and APS participated in all of the working group efforts. The working group made considerable progress towards identifying program workflows, technology sensitive incentive structures and levels, and technology specific requirements and limitations. APS will use the approach and technology requirements developed by the UCPP working group for this Plan. Further, APS has gained considerable experience in program implementation and has used that experience in developing many of the features presented in this Plan.

The Plan and the associated planning models, implementation strategies, and budgeting for the DE program were all designed with specific consideration of the insights provided by the UCPP working group, program implementation and ongoing stakeholder input.

This Plan details the process by which customers will obtain incentives, the requirements associated with the selection, installation, and operation of the DE system, and the measurement of DE performance for compliance reporting and program evaluation. This Plan is designed to provide uniformity and consistency in the administration of APS's DE program.

As part of the RES, the energy generated or displaced by the DE system is applied towards the DE percentage of APS's renewable energy requirement.[2] The unit used to track kilowatt hours ("kWh") derived from renewable resources for purposes of compliance with the RES is the Renewable Energy Credit ("REC").[3] One REC equals one kWh or kWh equivalent (for systems that do not generate electricity).

This Plan will ensure that each customer with eligible technology will be afforded the opportunity to obtain a reservation. The processes described herein are based on technologies and systems with which APS has considerable experience. Technologies, incentive

[1] Decision No. 70654 (December 18, 2008).
[2] A.A.C. R14-2-1805(B).
[3] A.A.C. R14-2-1801(N) – ""Renewable Energy Credit" means the unit created to track kWh derived from an Eligible Renewable Energy Resource or kWh equivalent of Conventional Energy Resources displaced by Distributed Energy Renewable Resources."

configurations, and development models which are newly incorporated may require special consideration until new implementation strategies and methods can be defined.

The following DE technologies are eligible for incentives:

- Biogas Electricity Generator, Biomass Electricity Generator
- Grid-tied and Off-grid Solar Photovoltaic Generators ("PV")
- Biomass Thermal Systems and Biogas Thermal Systems
- Non-residential Solar Pool Heating Systems
- Geothermal Space Heating and Process Heating Systems
- Geothermal Electricity Generator
- Renewable Combined Heat and Power System ("CHP")
- Non-residential Solar Daylighting
- Solar Heating, Ventilation, and Air Conditioning ("Solar HVAC")
- Solar Industrial Process Heating and Cooling
- Solar Space Cooling
- Solar Space Heating
- Solar Water Heating
- Grid-tied and Off-grid Wind Generators of 1 megawatt ("MW") or less
- Fuel Cells that use only renewable fuels
- New Hydropower Generators of 10 MW or less

2. PROJECT CATEGORIES

There are three project categories described by this Plan: Standardized projects, Market-Based projects, and Customer Self-Directed projects.

2.1 Standardized Projects

Unless noted otherwise in this Plan, all information contained herein applies to the administration of standardized projects. By definition, standardized projects follow the procedures and incentives described in this Plan. Incentives available for these projects are described in Exhibit 1. APS anticipates that the vast majority of projects facilitated by this Plan will be standardized projects. The processes described for the standard projects are based on technologies and systems with which APS has considerable experience; technologies and incentive configurations which are newly incorporated may require special consideration until new implementation strategies and methods can be developed.

2.2 Market-Based Projects

Since considerable uncertainty exists with respect to this Plan's ability to meet all expected project variations with standardized incentive offerings, APS believes it is appropriate to fund market-based projects during each program year. This funding will be applied to projects which, for one reason or another, cannot comply with the requirements of the standardized incentive offerings. APS may also solicit market-based projects to meet specific program goals. For example, although the DEAP attempts to identify and accommodate a large range of potential DE project types, financing options, and system host alternatives, specific shortcomings were

identified in the proposed approach. Those shortcomings include concerns regarding increasing cost effectiveness of residential incentives, facilitating installations for multi-tenant residential developments, and challenging DE developers to look at creative mechanisms by which to address the residential DE market.

Projects with staged completion dates, multi-participant or multi-system projects, projects involving more than one technology where an interrelated incentive was not developed, projects requiring new or unique agreement terms, or projects requiring timelines differing from those detailed in this Plan may be eligible for incentives as part of the DEAP. In addition, this Plan does not identify incentives for fuel cells and small hydroelectric facilities; those technologies may also be eligible for incentives as market-based projects.

Market-based projects must achieve similar financial efficiency as the standardized projects detailed in this Plan to be eligible for incentives. Incentives applied for market-based projects must meet the lower of: 1) the maximum allowable incentive for the proposed technology as described in the applicable incentive matrix attached as Exhibit 1, or 2) the average incentive of projects accepted by APS for disbursement for the proposed technology in the previous year. Some qualifying technologies will not have either of the previously described financial efficiency measures. Participants seeking to employ those technologies will work with APS to develop an appropriate incentive.

2.3 Customer Self-Directed

The Customer Self-Directed project funding option is available to eligible customers.[4] The eligible customer must declare that it will self-direct on or before March 31 of the year prior to the year for self-direction. Customer Self-Directed funds can only be requested for prospective years, funds cannot include prior year payments, and funds cannot exceed the level of funding paid by the eligible customer towards the RES in the year prior to the requested allocation.

In order to be eligible for the incentives detailed in this Plan (Exhibit 1), Customer Self-Directed projects must achieve similar financial efficiency as the standardized and market-based projects discussed above. If the eligible customer wishes to apply Customer Self-Directed funds to a DE system or another application not described in the applicable Incentive Matrix, the customer must submit documentation describing the project economics and the requested incentive level. All projects proposed for Customer Self-Directed funding must meet the requirements described in the RES.[5]

Eligible customers who have facilities in the service territories of more than one affected utility can only apply for funds from APS that were collected by APS. The funds obtained from APS can only be used for projects in APS's service territory. Customer Self-Directed projects are also subject to the general requirements set forth in this Plan including installation, operation, REC exchange, and system performance reporting.

For purposes of financing DE projects, funds for Customer Self-Directed projects may be assigned to third parties. Such assignment remains the sole right of the customer.

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[4] A.A.C. R14-2-1801(H) – ""Eligible Customer" means an entity that pays Tariff funds of at least $25,000 annually for any number of related accounts or services within an Affected Utility's service area."

[5] A.A.C. R14-2-1809.

2.4 General

Under some circumstances, such as new residential or non-residential construction, a project may not identify the account holder for the APS billing meter at the project site or the party holding legal right to the property in APS territory where the DE system will be located (referred to in the remainder of this Plan as the "Participant") at project initiation. Regardless of the project design, implementation, or timeline, a Participant must have installed a system that is ready for commissioning and, if grid-tied, have established an account to receive electrical service from APS before the incentive will be paid.

3. INCENTIVE TYPES

The DE Program offers two standard incentive options: Up-front Incentives ("UFI") and Production-Based Incentives ("PBI").

UFIs are those incentives where the Participant receives a one time payment based on the DE system's designed capacity, or a one time payment based on the first-year energy savings provided by the DE system. This type of incentive is applied to smaller non-residential installations and for all standard residential installations. PBIs allow the Participant to collect incentive payments in direct relation to the actual system production. Those payments are received by the Participant over time and are based on an agreed upon contract term.

Incentive levels for both UFIs and PBIs are detailed in the incentive matrices included in Exhibit 1. Each incentive matrix prescribes a decline from the incentive levels detailed for the preceding period of the program. Those declines were discussed in detail as part of Commission Staff's UCPP Working Group and Decision No. 71686.[6] and Decision No. 71913[7] In general, the declining incentive levels are designed to reflect several key expectations of the DE markets, which include declining costs of DE technologies, economic efficiency resulting from increased demand on the DE technologies, and increased availability of equipment required in the development of DE systems.

4. PROGRAM REQUIREMENTS

Requirements detailed in this Plan are designed to provide clarity for program Participants and DE developers, to increase the certainty of energy generation and, as a result, production of the RECs for APS's compliance with the RES, and to ultimately drive cost-effectiveness for the DE requirement in the RES.

4.1 General

This program is designed to facilitate Participant installation of DE resources to displace Conventional Energy Resource usage.[8] REIP incentives are designed to defray a portion of the

[6] Issued April 30, 2010.
[7] Issued September 28, 2010.
[8] A.A.C. R14-2-1801(C) – ""Conventional Energy Resource" means an energy resource that is non-renewable in nature, such as natural gas, coal, oil, and uranium, or electricity that is produced with energy resources that are not Renewable Energy Resources."

costs associated with the installation of DE resources for the Participant. Systems must be located on the Participant's property. All systems must be in APS territory. A project developer that builds an eligible DE system that provides a portion of the system's energy output to a non-Participant must provide metering to document the energy produced by the DE system that is received specifically by the program Participant.

Funding is not guaranteed without written confirmation of a reservation from APS. The Participant must follow the reservation procedure outlined in this Plan for APS to set allocated incentive dollars for the specific DE system proposed. If a Participant is receiving electrical service from APS, the Participant must not be delinquent in payments to the Company before an incentive payment can be issued.

Specific funding allocations are used to implement the DE incentive program. Once funds have been exhausted in any one category of this program, a Participant applying for funding within that category may be placed on a waiting list. Funding requests for a project are limited to one application per incentive program per technology; no future request may be applied to that project or the same technology until the original request has expired.

4.1.1 Reservations for New Construction

Reservations can be made for systems that will be installed as part of new residential or non-residential construction. Prior to receipt of a program incentive, a Participant must have installed a system that is ready for commissioning and, if grid-tied, have established an account to receive electrical service from APS before the incentive will be paid.

4.2 Installation and Equipment Specifications

Systems receiving incentives under this program must be installed according to program requirements, including manufacturers' recommendations and generally accepted industry standards. Installation of the system must be completed by an installer meeting the requirements described in Section 5 of this Plan. In addition, the dealer for the system must meet the requirements described in Section 5 of this Plan. Other requirements which are applicable under this Plan include, but are not limited to, the following:

- The project must comply with all applicable local, state, and federal regulations.
- Installations must meet applicable governmental statutes, codes, ordinances, and accepted engineering and installation practices.
- Systems must be permitted with and pass inspection by the authority having jurisdiction ("AHJ") over construction projects in the Participant's locale, or, if the site is not governed by an AHJ, the Participant must provide a certification in lieu of AHJ clearance.
- If the inverter of the DE system is interconnected or in any way connected to the APS grid – a "Grid-Tied System" – the system must meet all applicable APS Interconnection Requirements.
- Domestic Solar Water Heater systems must pass the APS compliance check to ensure that the installation meets the required guidelines.

- APS may request copies of any documents to assure compliance with government, institutional, or DE program requirements that are either explicitly or implicitly described by this Plan.

Distributed energy projects are to be used to serve the Participant's load at the designated point of delivery for APS's electrical service ("service entrance"), or metering point for customers who take service at primary or transmission voltage levels, on adjacent and contiguous sites.[9] It may not be used to serve other service entrances or metering points, even if they are located on the same property and belong to the same customer, unless the service entrances or meters are "totalized" according to APS's Service Schedule 4. If any other requirements described in this Plan conflict with APS approved rate schedules, or government or other institutional requirements as listed above, the conflicting requirements in this Plan may not be imposed.

All major components of the DE system must be new and must not have been previously placed in service in any other location or for any other application. A DE system purchased and ~~installed~~ interconnected more than 180 days before the date that APS approves the reservation request will not be considered "new" under this Plan. APS may consider exceptions to this timeframe when justified by the Participant in writing. The DE system must also comply with the technology specific criteria detailed below. When technology-specific criteria reference third party standards, the requirements of those standards are fully applicable.

The rapid growth in national and international renewable energy programs is resulting in greater need for the development of standardization in design, performance measurement, system integrity/longevity/maintenance, and installation techniques. New standards are likely to develop in the near future for technologies included in the DE program, and APS reserves the right to incorporate new standards into plan requirements as necessary and appropriate. The following standards or standard development bodies are referenced as part of the technology specific criteria.

- The Active Solar Heating Systems Design Manual developed by the American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. ("ASHRAE") in cooperation with the Solar Energy Industries Association ("SEIA") and the ACES Research and Management Foundation (the "Design Manual").
- Arizona state boiler regulations (A.A.C. R20-5-401 to R20-5-420).
- Select technology specific qualification requirements developed by Go Solar California ("GSC").
- Solar Rating and Certification Corporation ("SRCC"). The SRCC criteria and ratings can be viewed at www.solar-rating.org.
- The Underwriters Laboratory ("UL").

The technology standards are relied upon, in part, to develop a clear understanding of the DE system capacity, energy savings and expected energy production. Incentives offered under this program are based on these system parameters. Therefore, to encourage transparency in program transaction and clarity for Participants, current and accurate technology standards are fundamental to the program's success.

[9] Not separated by a private or public property or right of way.

Some technologies included as DE under the RES tend to be designed as custom applications and vary from installation to installation. In other cases, technologies are generally standardized for all installations. In these situations, installation standards have been published under the end-use application. If no technology specific standard is referenced, at a minimum, to qualify for DE incentives, an Energy Savings and Designed Output ("ES&D") report shall be provided as part of the reservation process.

The ES&D report must include either a testing certification for a substantially similar system prepared by a publicly funded laboratory, or an engineering report stamped by a registered professional engineer. The ES&D report shall provide a description of the system and major components, designed performance, system output, and a brief history of the components used in similar applications. If the system design differs from the recognized industry best practices, as described in the equipment qualifications listed in the Plan for the qualifying technology, the ES&D report must contain a certification that the system design is at least as effective as the specified requirements. For residential new construction, only one ES&D report is required per technology for each floor plan offered in the development for which the incentive is being requested.[10]

Where the equipment qualifications detailed below are required for program participation, the technology specific installation guidance is provided to program participants to convey information on installation and operation practices that are most likely to achieve the DE system's designed output. The requirements described herein are not intended as engineering recommendations, services, or technical advice. Engineering recommendations, design, and performance data will be provided to the Participant by their supplier, installer, or professional advisor. Although installation guidance is not currently mandated for a project to receive an incentive, the guidance does reflect both industry and utility concurrence on those practices that are important for a technology to best achieve the designed output. APS reserves the right to modify equipment qualifications and/or installation guidance if APS becomes aware that such qualifications or guidance results in unsafe conditions, provides inappropriate results for the customer, or is inconsistent with program objectives.

4.2.1 Biomass/Biogas and CHP (Electric and Thermal) and Biomass/Biogas Cooling

Equipment Qualifications

- Systems must include a dedicated performance meter to allow for monitoring of the number of RECs produced.
- A complete ES&D report must be submitted. Biomass system installations involving a regulated boiler or pressure vessel are required to include in the ES&D report confirmation of conformance with all Arizona state boiler regulations, provide a qualifying boiler inspection identification number, and keep all applicable permits in good standing.

[10] Any deviations from the standard floor plan that the ES&D report was originally approved for will require re-submission of an ES&D report.

Installation Guidance

Because of the individual nature of biomass systems, care should be taken to ensure the system complies with all applicable permitting and regulatory requirements, including but not limited to air emission standards and air permit regulations.

4.2.2 Non-residential Solar Daylighting

Equipment Qualifications

Energy savings and designed output for the system will be verified by submitting either a testing certification for a substantially similar system prepared by a publicly funded laboratory or energy savings modeled as approved by APS, or by submitting an engineering report stamped by a registered professional engineer or accredited Association of Energy Engineers ("AEE") Measurement and Verification professional. The report shall include such items as installed cost, energy savings (lighting savings only – no associated HVAC savings), lighting levels (artificial and daylighting), and control scheme methodology (lighting levels, savings, and control mechanism), as well as the inclusion of the following components as part of the overall daylighting system design:

- A roof mounted skylight assembly with a dome having a minimum 70% solar transmittance.
- A reflective light well to the interior ceiling or a minimum 12" below roof deck in open bay areas.
- An interior diffusion lens.
- A minimum of one thermal break/dead air space in the system between the skylight dome and the interior diffuser.
- If artificial lighting systems remain a part of the installation, the system shall include automated lighting control(s) that are programmed to keep electric lights off during daylight hours.
- The system must provide a minimum of 70% of the light output of the artificial lighting system that would otherwise be used for all of the claimed period of energy savings, as measured in foot-candles.

Installation Guidance

All systems should be installed such that the skylight dome is substantially unshaded and have substantially unobstructed exposure to direct sunlight between the hours of 9 a.m. and 3 p.m.

4.2.3 Small Wind Generator

A small wind generator is a system with a nameplate rating of 1 (one) MW or less. The technology criteria described below are intended for small wind generators with a nameplate rating of 100kW or less. Systems larger than 100 kW will be required to submit a detailed

package describing site selection, expected energy production, and an engineered system design and installation as part of an ES&D report.

Equipment Qualifications

- Eligible small wind systems must be certified and nameplate rated by the Consumer Energy Center ("CEC") or other qualified third party selected by APS to provide certification and a nameplate rating. A list of certified generators is available at the CEC website (www.consumerenergycenter.org/erprebate/equipment.html). For grid-tied or off-grid wind generators where an inverter is used, APS will use the lesser of the CEC Wind Turbine Power Output Rating or Inverter Power Rating as the basis for calculating the UFI payment.
- Grid-tied inverters used as part of the system shall be listed to UL Standard 1741.
- The tower used in the installation must be designed by a registered professional engineer.
- The wind generator and system must include a five year warranty and an operation and maintenance plan for the full operational life of the system.

In addition to the requirements for small wind generators outlined above, systems with a nameplate rating larger than 100 kW will be required to submit an ES&D Report.

Installation Guidance

Location: A wind turbine hub should be at least 20 feet above any surrounding object and at least 28 feet above the ground within a 250-foot radius. Wind generators should be installed in locations with an elevation at or above the general elevation of the surrounding terrain.

Lot size: The lot size should be one-half acre at a minimum. Municipalities and public facilities, such as schools and libraries, may not need to meet the minimum lot size requirements.

The installed system should be demonstrated to obtain at least a 15% annual capacity factor. The following criteria are readily available calculations which may demonstrate the potential for a 15% capacity factor, but other methods may be used. The installation location should have a demonstrated average annual wind speed of at least 9 MPH as measured at a height of no more than 50 feet above the ground. Average annual wind speed can be demonstrated by wind speed records from an airport, weather station or university within 20 miles of the proposed wind generator location, or by a 50 meter wind power density classification of Class 2 "Marginal" or higher on the "State of Arizona Average Annual Wind Resource" map, dated July 16, 2005 or later, as published by Sustainable Energy Solutions of Northern Arizona University. Northern Arizona University provides detailed wind resource maps as well as other resource services. For more information contact Northern Arizona University at http://wind.nau.edu/maps/.

4.2.4 Photovoltaic Systems

- All systems shall be installed with a horizontal tilt angle between 0 degrees and 60 degrees, and azimuth angle of +/- 110 degrees of due south. Since

some installation alternatives are less than ideal for energy production, installation configurations for some systems receiving a UFI will not be eligible for the full incentive applicable to that system. APS will apply the PV off-angle and shading factor adjustment for the PV installation (Section 6.6).

- Photovoltaic modules must be covered by a manufacturer's warranty of at least 20 years.
- Inverters must be covered by a manufacturer's warranty of at least five years. The remaining operational life must be supported by a planned maintenance or equipment replacement schedule.

Grid-Tied Systems Equipment Qualifications

- The minimum PV array size shall be 1,000 W-DC.
- All crystalline silicon photovoltaic modules must be certified by a nationally recognized testing laboratory as meeting the requirements of UL Standard 1703 and IEC 61215. All thin-film modules must be certified by a nationally recognized testing laboratory as meeting the requirements of UL Standard 1703 and IEC 61646.
- All other electrical components used in the installation must be UL listed.
- The inverter must be ~~listed~~ tested and certified to UL Standard 1741 by a Nationally Recognized Testing Laboratory (NRTL) certified by OSHA to perform the UL 1741 test standard and shall be appropriately Labeled or Listed as defined in the National Electric Code.

Off-Grid Systems Equipment Qualifications

- The minimum, single-system PV array size shall be 200 W-DC.
- All photovoltaic modules must be certified by a nationally recognized testing laboratory as meeting the requirements of UL Standard 1703.
- All other electrical components used in the installation must be UL listed.
- If the installation is an AC application, the inverter must be listed to UL Standard 1741.
- "As-built" drawings shall be submitted to APS upon completion of the project and shall include a plant location map.
- The inverter must be tested and certified to UL Standard 1741 by a Nationally Recognized Testing Laboratory (NRTL) certified by OSHA to perform the UL 1741 test standard and shall be appropriately Labeled or Listed as defined in the National Electric Code.

4.2.5 Solar Space Cooling

Equipment Qualifications

- A complete ES&D Report must be submitted, certifying the following criteria:
  - The minimum cooling capacity of the system will be 120,000 BTU per hour (10 tons).

- Solar collector panels used will have a SRCC OG-100 rating or laboratory documentation showing the panel energy output under controlled and replicable test conditions.

Installation Guidance

- The horizontal tilt angle of the collector panels should be between 15 and 60 degrees and the panel orientation should be between +/- 45 degrees of south.
- All systems should be installed such that the energy collection system is substantially unshaded, and systems should have substantially unobstructed exposure to direct sunlight between the hours of 9 a.m. and 3 p.m.

4.2.6 Non-residential Solar Water Heating and Space Heating

Equipment Qualifications

A complete ES&D Report must be submitted that includes certification that solar collector panels used shall have a SRCC OG-100 certification or laboratory documentation showing the panel energy output under controlled and replicable test conditions.

Installation Guidance

- The horizontal tilt angle of the collector panels should be between 20 and 60 degrees and the panel orientation should be between +/- 45 degrees of south.
- All systems should be installed such that the energy collection system is substantially unshaded, and systems should have substantially unobstructed exposure to direct sunlight between the hours of 9 am and 3 pm.
- Active, open-loop systems are not eligible for incentives except for active, open-loop systems that have a proven technology or design that limits scaling and internal corrosion of system piping, and includes appropriate automatic methods for freeze protection. Details disclosing conformance with this exception shall be submitted as part of the ES&D report or manufacturer's verification documentation.

4.2.7 Small Domestic Solar Water Heating

Equipment Qualifications

- Domestic Solar Water Heating systems must be rated and certified by the SRCC and ~~meet the~~ OG-300 system ~~standard~~program.
- The 'high' temperature limit of water entering the home shall be set at a maximum of ~~160~~ 130 degrees Fahrenheit. This can be accompanied by installing a temperature control valve or "tempering valve" on the downstream side fo the backup water heater.
- Contractors must provide a minimum five year equipment warranty as provided by the system manufacturer, including a minimum warranty period of two years for repair/replacement service to the Participant. The remaining

operational life must be supported by a planned maintenance or equipment replacement schedule.

- Systems shall be selected and sized according to the geographic location and hot water needs of the specific application.
- Active, open-loop systems are not eligible for incentives except for active, open-loop systems that have a proven technology or design that limits scaling and internal corrosion of system piping, and includes appropriate automatic methods for freeze protection. Details disclosing conformance with this exception shall be submitted as part of the manufacturer's verification documentation.
- Integrated collector storage ("ICS") systems shall have a minimum collector piping wall thickness of 0.058 inches. Details disclosing conformance with this requirement shall be submitted as part of the manufacturer's verification documentation.

Installation Guidance

- All systems must be installed as meeting the SRCC OG-300 installation guidance.
- All systems should be installed such that the energy collection system is unshaded, and systems should have substantially unobstructed exposure to direct sunlight between the hours of 9 am and 3 pm.

4.2.8 Small Domestic Solar Space Heating

Equipment Qualifications

- The system must be supported by a five year equipment warranty including a minimum warranty period of two years for repair/replacement service to the Participant. The remaining operational life must be supported by a planned maintenance or equipment replacement schedule.
- A report must be submitted verifying that:
  - The system will be incented based on a Solar Space Heating Incentive Calculation Procedure. The input sheet and description calculation procedure is attached as Exhibit 2 (APS will make the calculation procedure available upon request).
  - The system will utilize OG-100 certified collectors.
- The use of a solar space heating incentive calculation does not suggest or imply that a full energy audit is required to qualify for the solar space heating incentive. The intent of the calculation is for industry professionals to utilize the calculation tool to aid in facilitating sound system design.

Installation Guidance

- The system should be installed with a horizontal tilt angle between 15 degrees and 60 degrees, and an azimuth angle of +/- 60 degrees of due south. It is recommended that collectors be positioned for optimum winter heating

conditions at a minimum tilt angle of 45 degrees above horizontal, or as recommended by the manufacturer for the specific collector type and geographic location of installation.

- All systems should be installed such that the energy collection system is unshaded, and systems should have substantially unobstructed exposure to direct sunlight between the hours of 9 a.m. and 3 p.m.
- Heat exchange fluid in glycol systems should be tested, flushed, and refilled with new fluid as necessary, every five years, or per the manufacturer's recommendations.
- It is recommended that the anode rod be checked and replaced per manufacturer's recommendations, but no less frequently than every five years.
- It is recommended that the system design include a timer, switch, or other control device on the backup element of the storage tank.
- The collectors and storage tank should be in close proximity to the backup system and house distribution system to avoid excessive pressure or temperature losses.
- It is recommended that, in areas where water quality problems are reported to have reduced expected life of a solar water heater, a water quality test is performed for each residence to screen for materials which, through interaction with the materials of the proposed system, may reduce the expected operational life of the system components. The Participant should consider contacting the manufacturer to determine if warranty or operational life will be affected.
- In areas subject to snow accumulation, sufficient clearance should be provided to allow a 12" snowfall to be shed from a solar collector without shadowing any part of the collector.
- Each system should have an operation and maintenance manual at the Participant's site, and each Participant must complete an initial start up and operation training review with the contractor at the time of system start up.

4.2.9 Residential Solar Thermal (Heating and Domestic Hot Water)

Residential Solar Thermal is a single system design that produces both space heating and water heating for residential use. An ES&D Report must be submitted that includes certification that solar collector panels used in the installation shall have a SRCC OG-100 certification or laboratory documentation showing the panel energy output under controlled and replicable test conditions. Report details should be broken out on a month-by-month basis, and should include the following: total solar production based on installation and location, total building BTU requirements, BTU space heating requirements, domestic hot water BTU requirements, and any other hot water BTU requirements.

Equipment Qualifications

- The system will utilize OG-100 certified collectors.
- The system must be supported by a five year equipment warranty including a minimum warranty period of two years for repair/replacement service to the

Participant. The remaining operational life must be supported by a planned maintenance or equipment replacement schedule.

Installation Guidance

- The system should be installed with a horizontal tilt angle between 20 degrees and 60 degrees, and an azimuth angle of +/- 60 degrees of due south. It is recommended that collectors be positioned for optimum winter heating conditions at a minimum tilt angle of 45 degrees above horizontal, or as recommended by the manufacturer for the specific collector type and geographic location of installation.
- All systems should be installed such that the energy collection system is substantially unshaded, and systems should have substantially unobstructed exposure to direct sunlight between the hours of 9 a.m. and 3 p.m.
- Heat exchange fluid in glycol systems should be tested and flushed and refilled with new fluid as necessary, every five years, or per the manufacturer's recommendations.
- It is recommended that the anode rod be checked and replaced per manufacturer's recommendations, but no less frequently than every five years.

- It is recommended that the system design include a timer, switch, or other control device on the backup element of the storage tank.
- The collectors and storage tank should be in close proximity to the backup system and house distribution system to avoid excessive pressure or temperature losses.

- It is recommended that, in areas where water quality problems are reported to have reduced expected life of a solar water heater, a water quality test is performed for each residence to screen for materials which, through interaction with the materials of the proposed system, may reduce the expected operational life of the system components. The Participant should consider contacting the manufacturer to determine if warranty or operational life will be affected.

- Active, open-loop systems are not eligible for incentives except for active, open-loop systems that have a proven technology or design that limits scaling and internal corrosion of system piping, and includes appropriate automatic methods for freeze protection. Details disclosing conformance with this exception shall be submitted as part of the manufacturer's verification documentation.

- In areas subject to snow accumulation, sufficient clearance should be provided to allow a 12" snowfall to be shed from a solar collector without shadowing any part of the collector.
- Each system should have an operation and maintenance manual at the Participant's site, and each Participant must complete an initial start up and operation training review with the contractor at the time of system start up.

4.2.10 Non-Residential Pool Heating

Equipment Qualifications

- A complete ES&D Report must be submitted.

4.2.11 Geothermal Space/Process Heating & Cooling

Equipment Qualifications

- A complete ES&D report must be submitted by the contractor and approved by APS prior to the installation.
- Equipment must be UL approved and meet the applicable Air Conditioning and Refrigeration Institute (ARI) Performance Certifications.
- Equipment must meet the following minimum efficiency requirements:
  - Closed Loop: 14.1 EER 3.3 COP
  - Open Loop: 16.2 EER 3.6 COP

Installation Guidance

- Ground loop systems must be installed by a contractor who holds a current International Ground Source Heat Pump Association (IGSHPA) certification.
- Wells must be permitted and drilled by a State of Arizona certified contractor.
- Contractors must hold a valid National Balancing Institute (NBI) or Building Performance Institute (BPI) certification.
- All systems should be designed (sized) and installed in accordance to the Air Conditioning Contractors of America (ACCA) Quality Installation Specifications and Standards.
- The operational life must be supported by a planned maintenance or equipment replacement schedule.
-

4.3 Inspections

DE systems must be permitted with and inspected by the AHJ over construction projects in the Participant's locale or the Participant must provide to APS a Letter in Lieu of Electrical Clearance or other waiver acceptable to APS.[11] Any inspections conducted by APS are in addition to, not in lieu of, these building and construction related inspections. Access to the system shall be made available to APS during normal business hours for the purpose of conducting the applicable APS inspection. APS will at times be inspecting system components on the Participant side of the meter.

All grid-tied systems will be inspected by APS to ensure the system is connected to the grid in conformance with APS's Interconnection Requirements.[12] Under no circumstances is any grid-tied system to be installed in parallel or otherwise connected with the APS system until such time that the system has been inspected by APS and written authorization is received from APS. APS

[11] The Letter in Lieu of Electrical Clearance is available at aps.com.
[12] APS's Interconnection Requirements are available at aps.com .

will normally conduct the interconnection inspection only after the system has been inspected by the AHJ.

Select residential solar water heating systems will be required to pass program compliance checks. The systems will be examined to ensure the system is installed safely and according to the SRCC OG-300 installation guidelines, including state and local plumbing and mechanical codes. Payment of incentive funding is contingent on successful passage of the APS compliance check; APS compliance checks for systems installed by active members of the APS Qualified Solar Installer ("QSI") program will be waived after successful passage of the required amount of inspections, upon which incentive funding will be released to the Participant without an APS compliance check.[13] APS will normally conduct the compliance check only after the system has been inspected by the AHJ.

APS will select a subset of DE program reservations for an APS DE Program conformance inspection. The selected systems will be required to pass the conformance inspection before the Participant is eligible to receive an incentive payment. The purpose of the conformance inspection is to ensure that the system has been installed in accordance with the terms, conditions, and specifications provided on the Reservation Application and Credit Purchase Agreement and with the requirements outlined in this DEAP. The conformance inspections for photovoltaic systems will normally also include verification of the PV off-angle and shading factor reported for the PV installation in the reservation.

APS will randomly select some DE Program installations whose systems will receive a maintenance inspection to field verify that the system is being operated in compliance with the terms and conditions agreed to in the Reservation Request and Credit Purchase Agreement and the requirements outlined in this Plan. The purpose of the maintenance inspection is to gather information that will assist APS in its evaluation of the effectiveness of the DEAP.

4.4 Metering and Meter Reading

All DE systems must include a system dedicated kWh meter, or meters, which allows for measurement of system energy production (the "Performance Meter"). The Performance Meter must be installed in compliance with the APS Electric Service Requirements Manual (ESRM) Section 300, which is available on APS's website, and must be installed so as to record the renewable energy A/C power output produced by the inverter or generator. If Performance Meter output data is used to calculate a PBI, other metering arrangements may be required depending on the configuration of the system. These arrangements may include wireless or telephone line telemetry at the customer's expense. The Performance Meters are in addition to the APS billing meter and must be appropriately identified as the "Photovoltaic, Wind, etc., Performance Meter." The Performance Meter must be calibrated to meet industry standards and must provide either direct kWh readings or readings which can readily be converted to kWh using standard engineering conversions. The Performance Meter is required to be located adjacent to the APS billing meter unless otherwise approved by APS.

[13] The quantity of inspections is determined by the APS QSI program requirements.

In those circumstances where the DE system is a hybrid system (i.e., uses more than one technology), APS requires that a Performance Meter be in place to measure the kWh produced from each renewable resource so that the information can be accurately recorded.

APS may, at its discretion, install APS-owned Performance Meters for system monitoring purposes. A Performance Meter owned and read by APS may facilitate APS's ability to gather performance data and to report system performance to the Participant on their standard APS bill.

System generation (REC production) must be reported annually to APS for UFI Participants, unless other arrangements have been approved by APS. Participants utilizing PBIs will be provided with monthly system production on a quarterly basis. The reported production is to be verified by the participant or authorized representative and returned to APS along with the REC documentation. Payment for system production will be made on a quarterly basis following APS's receipt of the REC documentation and production verification.

4.5 REC Ownership

As part of APS's payment of a UFI, the utility will be given complete and irrevocable ownership of all RECs expected from system production for 20 years, the expected or planned effective life of the DE system. APS's payment of a PBI will assure APS complete and irrevocable ownership of the REC for the full duration of the PBI agreement. RECs provided to APS as a result of a DE system installation will be applied towards APS' RES targets.

4.6 System Maintenance

To ensure a system benefit received by the REC purchase, APS requires that the Participant maintain and operate the DE system in APS territory for the specific duration detailed in the Reservation Request and Credit Purchase Agreement. If the DE system either needs to be removed from the Participant property or if it is no longer operational, the Participant must notify APS within five business days after the DE system is either removed from the property or is no longer operational. Short (those lasting less than one month) system "outages" as part of system repair or planned maintenance are anticipated as part of this program and need not be reported in accordance with the above requirement.

5. INSTALLER AND DEALER QUALIFICATIONS

The installer must possess a valid license on file with the Arizona Registrar of Contractors ("AZROC"), with a license classification appropriate for the technology being installed, or the installer must identify use of a contractor holding an appropriate license on file with the AZROC for the technology being installed. With APS's implementation of its Qualified Solar Installer program, it is APS's intention to rely on training and certification to ensure the consistent quality of installations at customer sites. With the maturation of our Qualified Solar Installer program over time, APS will ultimately require a customer to use an installer qualified under this program in order to be eligible for renewable energy incentives.

If the equipment dealer is a party to the reservation request, the dealer must provide proof of possession of a business license that is in good standing with the appropriate agency(ies) and must also provide proof of liability insurance if the business license provided does not require liability insurance.

Solar providers are responsible for providing written notification to APS of mergers or changes to the name of the business.

6. INCENTIVES

6.1 Non-Residential Funding Allocation

As described in APS's RES Implementation Plan, the annual funding level for DE incentives was established primarily based on previous year program installations and reservations with consideration for estimates of anticipated consumer demand for the various technologies, project sales and development time frames, variations in the levels of technology maturity, and availability of equipment for installation. The proposed DE incentive budget and the incentive budget allocation provides for exceeding the DE target for the full five years described in the current Implementation Plan.

The incentive matrices in Exhibit 1 describe incentive reductions every two years of the program. Those planned reductions are designed to reflect the anticipation that DE technologies will decline in cost as market penetration and product availability increase. In the event that funds collected for use in the DE incentive program are not fully subscribed in a program year, those funds will be applied towards the next program year and allocated to achieve the required energy outcome between residential and non-residential projects.

Non-residential funds are made available for project reservations on the first working day after January 1st of each program year. Funds for residential projects will be made available for reservation beginning October 2, 2010 (and on October 1 of each subsequent year for the following year's Implementation Plan) on a first-come, first-reserved basis; payments will not be made until after the first working day after January 1st of each program year.

Funds offered under APS's expanded non-residential program will be divided into four categories; Large Projects (PBI), Medium Projects (PBI), Small Projects (UFI), and qualifying projects under the Schools and Government Program (PBI).

For purposes of APS's non-residential program, a Large Project is defined as any electricity producing project whose inverter(s) or generator(s) is rated greater than 200 kWac or any project whose lifetime incentive commitment is greater than $2.5 million dollars. Incentives will be capped for electricity producing systems at a capacity size of 2,000 kWac per interconnection point; actual system size is not limited under this program, although all other interconnection and program requirements remain applicable.

A Medium Project is defined as any electricity producing project whose inverter(s) or generator(s) is rated 200 kWac or less, or any project whose lifetime incentive commitment is less than $2.5 million dollars, and does not qualify for an up-front incentive.

EXHIBIT F

A Small Project is defined as any project that qualifies for an up-front incentive or the system size is less than 30 kWac.

The Schools and Government Program is designed to assist publicly funded (K-12) schools and state/local governmental facilities. Projects are open to solar daylighting, solar electric, solar space heating/water heating and solar space cooling technologies. For facilities less than 75,000 square feet, projects are limited to 350 kWac per interconnected meter for generating technologies; facilities greater than 75,000 square feet are limited to 550 kWac per interconnected meter. Solar daylighting incentives are capped at $150,000 per year per customer. Projects larger than the above mentioned limits will be required to participate in the standard program as a Large Project.

Large Project funding described in APS's Implementation Plan will be divided equally 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). Small and Medium Project funding as described in APS's Implementation Plan will be allocated equally over six nomination periods (January-February, March-April, May-June, July-August, September-October, and November-December) with each equaling two full calendar months. The Schools and Government Program funding will be allocated over six nomination periods (January-February, March-April, May-June, July-August, September-October, and November-December). All nomination periods close at 5:00 pm Arizona time on the last business day of the applicable month.

Non-residential reservation requests are submitted as a bid expressed in $/REC (or $/kWh) and, if a PBI, the preferred REC and payment terms. Each bid is evaluated by a project ranking "calculator." A sample ranking calculator was prepared as part of the Commission Staff UCPP working group; APS's ranking calculator is designed to function in substantially the same manner as the sample calculator. The input sheet and description for the sample calculator is attached as Exhibit 3. APS's ranking calculator is publicly available on APS's website.

In the event that budgeted funds available for a nomination period exceed the total amount of incentives requested, all qualifying applications will be approved. Remaining budgeted funds for that nomination period will be equally divided among the remaining nomination periods within that category. If an application is approved, APS will send a reservation confirmation to the applicant.

In the event that the demand for non-residential incentives exceeds the budgeted funds available for a nomination period in any one project category, APS will use the ranking calculator to select the projects with the highest ranking, matching requested incentives with the available budgeted funds. If the application is denied because funding is not available, APS will send notification to the applicant. In the event that requests are denied due to funding, ranking values will be posted, along with their approval status. No specific project information (customer/contractor names, locations or non-energy/cost details) will be listed to ensure that confidentiality is maintained.

6.2 Residential Funding Allocation

Residential grid-tied PV incentives will be allocated into four Funding Cycles. Available residential grid-tied PV incentives in each funding cycle will be equivalent to the greater of one quarter of the total available residential grid-tied PV incentives or 600 reservations. The fourth funding cycle will not be limited by the number of applications and will utilize remaining residential grid-tied PV funds available.

The Funding Cycles are defined below. For the purposes of this Plan, Funding Cycle One of each Plan year occurs during the final quarter of the calendar year preceding the current Plan.

Funding Cycle 1 - October ~~2~~ 1[14] through December 31
Funding Cycle 2 - January 1 through March 31
Funding Cycle 3 - April 1 through June 30
Funding Cycle 4 - July 1 through September 31

Throughout the Plan year, applications will be eligible for a "rapid reservation." The rapid reservation utilizes a reduced incentive amount designed to continue to challenge the PV market towards cost reductions, and is designed to reward customers and installers with lower cost customer installations and to allow for expedited installations. All "rapid reservation" incentive requests and their associated budgets will be applied against Funding Cycle 4 of the applicable year. Rapid Reservations will not count against the 600 reservation cap in Funding Cycles 1 through 3. APS will confirm all grid-tied PV applications that request the rapid reservation incentive amount. APS will continue to accept all other PV applications up to the Funding Cycle budget and will confirm these applications based on the order in which they were received.

Any unfunded application that is not reserved upon submission will be wait-listed for approval in a subsequent funding cycle, based upon funding availability. All eligible non-PV DE technologies will be reserved on a first-come, first-reserved basis, contingent upon funding availability.

6.3 Incentive Principles

As part of this Plan, residential systems are eligible only for UFIs. Non-residential systems may receive either a UFI or a PBI, depending on the technology and the installation size. Non-residential UFIs were developed for technologies where the average project is less than 30 kWac or the average project size results in a total incentive less than or equal to $50,000. PBIs were developed for technologies where the average project size results in an incentive totaling more than $50,000, based on the net-present value of the total of incentive payments or the otherwise applicable UFI, and for systems greater than 30 kWac.

Incentive funds can be applied to a "project," which is the sum of all DE systems installed at a Participant site that are eligible for program incentives in a single calendar year. A Participant site can obtain a UFI for multiple projects, under separate reservations, up to $50,000 at each Participant site per calendar year.

[14] As part of the 2011 RES Implementation Plan, Funding Cycle 1 was scheduled to begin on October 2, 2010.

Residential UFIs were developed to encourage flexibility and technology diversity within that market segment. Residential UFIs are available for PV systems up to 30 kWdc. Residential non-PV technologies are eligible for UFI incentives up to a total of $50,000 for each installation. Larger residential DE systems may be installed by the customer consistent with other programs and APS limitations, but will not be eligible for incentives for the fraction above the UFI incentive limit.

6.3.1 Reservations for New Residential Construction

Incorporation of DE systems into the development of new residential construction requires the reservation of funds in a manner other than that described in the standard UFI process. Approved reservations for incentive funds for new construction will conform to the following provisions:

- Funds may be reserved for up to twelve months for a single reservation.
- All funds within a reservation must be allocated to a specific lot within the development or sub-division.
- The reservation must specifically indicate the development schedule for the identified lots and the year when the incentive payment is expected. Once a project is initiated, funding "adjustments" cannot exceed 10 percent of the requested annual funding.
- Funds reserved but uncollected as completed projects in one year will be forfeited.
- Once funds have been reserved for a lot, no future reservation may be applied to that lot or the same technology until the original reservation has expired.

6.4 Standardized Incentives

Incentives levels provided as part of this Plan were collaboratively developed, and, in part, were created to help or expand incipient markets for DE, taking into account each technology's specific market conditions, and placing a portion of the cost on the Participant. Incentive levels are provided in accordance with the applicable year project incentive matrix included as Exhibit 1.

6.5 Incentive Caps

DE incentives can be applied to systems designed to serve only the typical load of the Participant. Typical load is defined as the total annual kWhs used by that customer at the metered point of interconnection. The assessment of that typical load does not preclude the periodic production of electricity in excess of the Participant's demand. Under certain circumstances it is understood that select Participant installations will be designed to serve loads greater than that of the Participant. Under those circumstances, the incentive will be applied only to the fraction of the generation that is used to serve the typical Participant load; incentives will not be paid for any production that exceeds typical Participant load. The DE incentives were developed separate and apart from other utility program incentives, such as those for demand side management projects. Systems are not eligible to receive DE incentives if incentives from other APS programs are received.

Dealer's and manufacturer's incentives are capped at 50% of the system cost basis when installing equipment on their homes or businesses. Dealers cannot include retail installation

costs in the cost basis calculation. Dealers must provide verification for the cost paid for each system component. Manufacturers cannot include their own technology in the cost basis.

6.6 De-Rating of Photovoltaic System Incentives

The productivity of photovoltaic systems is sensitive to the specifics of the installation method and location. In particular, these systems are impacted by shading and photovoltaic panel tilt angle and azimuth. This variability in system performance is taken into account when adjusting the available UFI level and determining the actual amount of incentive received by the Participant. Incentives for photovoltaic systems will be adjusted in accordance with the PV Off-Angle and Shading Adjustment Table attached as Exhibit 4.

6.7 Payment of PBIs

Participants receiving PBI funds will be provided with monthly system production on a quarterly basis. The reported production is to be verified by the participant or authorized representative and returned to APS along with the Renewable Energy Credit documentation. Payment for system production will be made on a quarterly basis following APS's receipt of the REC documentation and production verification.

6.8 Taxes

Program participants are solely responsible for the payment of any and all taxes applicable to the DE resource and/or the incentive payment(s).

6.9 Assignment of Payment

Systems may be owned by third parties, and APS may make payments to such third parties upon the written consent of the Participant. Participants may assign payments to an installer, dealer, or developer. APS will consider assignment to other parties upon request by the Participant.

6.10 Default

If the Participant fails to maintain and operate the DE system in APS territory for the period detailed in the Credit Purchase Agreement, which is never less than ten (10) years, the Participant shall be considered in default of the terms and conditions of the incentive payment agreement. Participants in default will be subject to damages and must reimburse the Program for all or a portion of the incentive(s) received to that point, subject to the terms of the Credit Purchase Agreement. The default terms in the Credit Purchase Agreement will vary slightly depending on whether the incentive is a UFI or PBI, but are designed to reimburse the Program for environmental credits that were paid and/or accounted for through the full incentive term, but not received. This is especially important for UFIs where APS is entitled to 20 years of credits through the payment of one up-front incentive.

EXHIBIT F

7. RESERVATION PROCESS OVERVIEW

Participant submits application to APS: The Participant must submit a signed application supplied by APS. APS will log the applications in the order received.

Participant receives reservation confirmation: After reviewing the application, APS will, based on funding availability, issue a reservation. APS will send a written confirmation to the applicant.

If the application is deficient in meeting one or more of the program requirements, APS will inform the Participant of the nature of the deficiency and will allow the Participant to correct the deficiency. If the application is denied because funding is not available, the request will be placed on a waiting list and APS will notify the applicant.

Participant must submit a W-9: APS will provide Participant with an on-line W-9 form. The W-9 must be completed and submitted back to APS prior to the final incentive payment. The completed W-9 will allow APS to issue the Participant an IRS Form 1099 to assist the Participant in the preparation of income tax returns. Recent IRS guidance indicates APS incentive payments are taxable income to the recipient.

Credit Purchase Agreement: ~~PBI~~ Non-residential participants must execute a Credit Purchase Agreement within 45 days of the date of the reservation confirmation from APS. At such time, the customer must also provide a complete executed contract between themselves and the developer/contractor for the installation of the proposed renewable technology.

Proof of Advancement: The Participant may be required to submit Proof of Advancement (written progress report) to APS within 60 days of reservation approval for UFIs, and within 120 days of reservation approval for PBIs to retain the reservation. The purpose of the Proof of Advancement requirement is to ensure that reservation dollars are allocated to projects that will advance to the installation stage. ~~Reservations requiring Proof of Advancement will be notified at the time of reservation approval.~~

Interconnection Application: The interconnection application and site plan diagram is submitted to APS. APS will provide preliminary approval that the system meets interconnection standards (grid-tied). Final approval will not be issued until the interconnection inspection is completed.

Participant Proceeds with Installation: The Participant must obtain all required permits, then proceed with system installation.

Grid-tied systems: Systems are required to pass an interconnection inspection that will be conducted by APS before the system can be authorized to operate in parallel to the APS grid. APS will conduct the interconnection inspection only after the system has been inspected by the AHJ or if APS has received a Letter in Lieu of Electrical Inspection. If the DE system passes the interconnection inspection, APS will provide the Participant with a written document that provides "Permission to Operate." If the DE system fails the interconnection inspection, the reservation can remain active, as long as the deficiency is remedied within the defined reservation timeframe.

Commissioning Packet: Participant must submit a signed Commissioning Packet supplied by APS. At a minimum, the Commissioning Packet will include certification from the installer/dealer and Participant that the system installed was consistent with the terms and conditions of the Reservation Packet and this Plan. If a material change was made between the time APS approved the reservation and the date APS received the Commissioning Packet, the Participant must complete an Amended Application. If the change increases the incentive amount the system is eligible to receive, APS will confirm that DE program funding is available. If funding is not available, APS will only provide an incentive in the amount requested in the Reservation Packet. Changes in the project plan that result in increased system output will only result in additional incentives beyond the original reservation amount if RES funding is sufficient/available.

If the system has been selected to receive a conformance inspection, as detailed in Section 4.3, the incentive payment will not be processed until after the system has passed the conformance inspection.

If the system is a photovoltaic system that has been selected to receive a conformance inspection, the incentive may be adjusted in accordance with the provisions set forth in Section 6.6 of this Plan.

APS sends incentive payment: For UFIs, APS will send the incentive payment or initiate incentive payments in accordance with the instructions provided by the Participant in the signed Commissioning Packet. For participants under a PBI, the payment process in Section 6.7 above will be followed.

8. EXTENSIONS AND CANCELLATION POLICY

A Participant will receive a written notice of reservation expiration if all program requirements have not been met within the reservation timeframe. The reservation timeframe for UFIs is 180 days from the reservation confirmation date to final completion and/or interconnection. For PBIs, the reservation timeframe is 365 days from the reservation confirmation to completion and/or interconnection. Upon APS's sole discretion, the Company may grant an extension for up to 90 days following timely receipt of a Participant's request for extension. All extension requests must be received before the assigned project completion date. Requests must document justification for the extension and must detail one of the following: 1) delays caused by APS or affiliated parties, 2) outstanding AHJ requirements, or 3) documented limitations on available material resources for the project where material orders occurred within the reservation timeframe. APS may request additional support for the Proof of Advancement to be considered the extension. The Company may approve written extension requests beyond 90 days only under extenuating circumstances.

9. ENERGY REPORTING PROGRAM MONITORING

APS will track progress toward program goals on an ongoing basis to monitor program effectiveness and sufficiency of the funding allocation. APS will compile data received from conducting the conformance and maintenance inspections, meter readings, and analyze trends in Participant participation and technology installation. The data will be evaluated on an ongoing

basis to better understand critical factors impacting the incentive structures and the overall effectiveness of this Plan. If the DEAP need to be adjusted to reflect new information, changing market conditions, incorrect initial assumptions, or technological innovations, APS will bring those issues to the attention of the Commission in a timely manner.

APS will report on the productivity of all distributed resources on an annual basis. For PBI systems, APS will report on the actual metered production of each system as reported by the Participant and confirmed by APS. For systems receiving a UFI, APS will report on the total installed capacity and projected productivity. APS will develop a method by which to calibrate the reported productivity and shall monitor that method for long-term accuracy.

On occasion, a DE system which received a UFI will be removed from the Participant property prior to the end of its agreement term without the permission of the utility. Also, on occasion, a DE system, which had received a UFI, will be in need of repair which the Participant does not plan to complete. If either situation occurs, and if despite reasonable efforts on the part of the APS the Participant will not reinstall or repair the DE system, then APS will continue to reflect in its annual compliance reporting the annual historic energy production for the system until the agreement term for the system has been completed.

In addition, APS will monitor that specific Participant and property to ensure that an additional incentive is not provided for any new DE system on that property until the operational life of the incented system has been completed. APS will attempt to monitor the number of missing and unrepaired DE systems and shall summarize its observations in its annual compliance report.

EXHIBIT G

EXHIBIT G
ADJUSTMENT SCHEDULE RES
RENEWABLE ENERGY STANDARD

APPLICATION

The Renewable Energy Standard ("RES") Adjustor shall apply to all retail Standard Offer or Direct Access service, excluding kWhs served in accordance with rate schedules Solar-2, Solar-3, and Adjustment Schedules GPS-1, GPS-2, and GPS-3. All provisions of the customer's current applicable rate schedule will apply in addition to the RES Adjustor. From time to time, the RES program spending requirements will be evaluated and if necessary the charge and/or caps may be modified by the Commission. Any new charges/caps will be applied in billing cycle 1 beginning in the month following Commission approval in A.C.C. Decision No. 70654 and will not be prorated. Details regarding the administration of this Adjustor can be found in A.A.C. R14-2-1808. The RES Adjustor and the Demand Side Management Adjustor may be combined on the customer's bill and shown on the "Environmental Benefits Surcharge" line.

RATES

The bill shall be calculated at the following rates:

All kWh	$0.~~008662~~009663	per kWh

SURCHARGE LIMITS

The monthly total of the Renewable Energy Standard Adjustment Charge shall not exceed the following limits:

Residential Customers	$~~3.46~~3.87	per service per month
Non-residential Customers	$~~128.70~~143.56	per service per month
Non-residential Customers with demand of 3,000 kW or higher per month for three consecutive months	$~~386.10~~430.67	per service per month

EXHIBIT H

EXHIBIT H
RATE SCHEDULE SGSP
SCHOOLS AND GOVERNMENT SOLAR PROGRAM
RIDER RATE

AVAILIBILITY

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, GS-SCHOOLS M, and GS-SCHOOLS 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 can 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.

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
GS-SCHOOLS M, GS-SCHOOLS L	$0.07158

(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 and adjustments 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.

- GS-SCHOOLS M, GS-SCHOOLS L – Solar Energy shall be netted from the on-peak, shoulder-peak and off-peak kWh according to the following allocation:

Season	Time Period		
	On-Peak	Shoulder-Peak	Off-Peak
Summer Peak (Jun-Aug)	15.0%	35.0%	50.0%
Summer Shoulder (May, Sep & Oct)	15.0%	35.0%	50.0%
Winter (Nov-Apr)	20.0%	10.0%	70.0%

If the net kWh is less than zero in any period, the remaining kWh shall be applied first to the on-peak, and then the shoulder-peak, and the off-peak period if necessary, where the resulting kWh in any period 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.