ORIGINAL

0000113784

BEFORE THE ARIZONA CORPORATION COMMISSION

RECEIVED
2010 JUL -1 P 3:45
AZ CORP COMMISSION
DOCKET CONTROL

COMMISSIONERS
KRISTIN K. MAYES - CHAIRMAN
GARY PIERCE
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP

E-04204A-10-0265

IN THE MATTER OF THE APPLICATION OF UNS ELECTRIC, INC. FOR APPROVAL OF ITS 2010 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN AND DISTRIBUTED ENERGY ADMINSITRATIVE PLAN AND REQUEST FOR RESET OF RENEWABLE ENERGY ADJUSTOR	DOCKET NO. E-01933A-10-_____

Arizona Corporation Commission
DOCKETED
JUL -1 2010
DOCKETED BY nr

APPLICATION

UNS Electric, Inc. ("UNS Electric" or "Company"), through undersigned counsel, hereby submits its 2011 Renewable Energy Standard ("RES") Implementation Plan (the "Plan") for Arizona Corporation Commission ("Commission") approval, in compliance with Arizona Administrative Code R14-2-1801, *et seq.*

UNS Electric's Plan incorporates both new and previously approved RES programs and agreements and purchase power agreements. The Plan provides for renewable generation in excess of UNS Electric's compliance requirement. In order to implement this Plan, UNS Electric requests approval of its 2011 RES Budget of $11.7 million, which would result in an average increase above the previously approved 2010 RES surcharge of approximately $0.0028 per kilowatt hour ("kWh"), or $0.0099 per kWh.

UNS Electric remains solidly committed to the RES and is encouraged by the growing participation of its customers. The Company has entered into agreements with developers for the construction of renewable generation. It is also moving forward with plans to construct its own renewable generation. And the Company continues to educate its customers regarding renewable energy. Moreover, the ongoing research and development of renewable energy generation in Arizona is critical to furthering the goals of the RES, and UNS Electric continues to educate itself in these areas.

UNS Electric's Plan is a realistic strategy for complying with the RES requirements and provides the Commission with an important opportunity to foster the construction of renewable generation for the benefit of Arizona electric service customers. Approval of this Plan and its accompanying budget is critical to UNS Electric's ability to meet and exceed its RES requirements.

Therefore, UNS Electric respectfully requests that the Commission: 1. Approve UNS Electric's 2011 Renewable Energy Implementation Plan; 2. Find that the Plan is in the public interest, including its budget of $11.7 million, the Bright Arizona Solar Buildout Plan, proposed modifications to UNS Electric's Distributed Generation Incentive Program, the proposed Renewable Energy Standard Adjustor Rate Schedule and other elements of the Plan; and 3. Find that the proposed RES surcharge of $0.0099 per kWh is just and reasonable.

RESPECTFULLY SUBMITTED this 1st day of July 2010.

UNS ELECTRIC, INC.

By _____

Michael W. Patten
Roshka DeWulf & Patten, PLC
One Arizona Center
400 East Van Buren Street, Suite 800
Phoenix, Arizona 85004

And

Philip J. Dion, Esq.
Melody Gilkey, Esq.
Tucson Electric Power Company
One S. Church Avenue, Suite 200
Tucson, Arizona 85701

ROSHKA DEWULF & PATTEN, PLC
ONE ARIZONA CENTER
400 EAST VAN BUREN STREET - SUITE 800
PHOENIX, ARIZONA 85004
TELEPHONE NO 602-256-6100
FACSIMILE 602-256-6800

Original and 13 copies of the foregoing filed this 19th day of July 2010 with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Copies of the foregoing hand-delivered/mailed this 19th day of July 2010 to the following:

Lyn Farmer
Chief Administrative Law Judge
Hearing Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Janice M. Alward, Esq.
Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Steve Olea
Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

By Mary Appolito

ROSHKA DEWULF & PATTEN, PLC
ONE ARIZONA CENTER
400 EAST VAN BUREN STREET - SUITE 800
PHOENIX, ARIZONA 85004
TELEPHONE NO 602-256-6100
FACSIMILE 602-256-6800

UNS Electric, Inc.

UNS Electric
2011 Renewable Energy Standard
Implementation Plan

TABLE OF CONTENTS

ATTACHED EXHIBITS

Exhibit 1	Energy and Demand by Technology Forecast
Exhibit 2	RES Budget
Exhibit 3	Definition of Market Cost of Comparable Conventional Generation
Exhibit 4	Above Market Cost of Comparable Conventional Generation by Technology (Confidential)
Exhibit 5	Renewable Energy Credit Purchase Program
Exhibit 6	REST– TS1 Renewable Energy Standard Tariff
Exhibit 7	REST – TS2 Renewable Energy Standard Tariff (Customer Self-Directed Renewable Energy Option)
Exhibit 8	Research and Development Projects
Exhibit 9	Bright Arizona Community Solar

I. EXECUTIVE SUMMARY

UNS Electric, Inc. ("UNS Electric" or "Company") has prepared its 2011 Implementation Plan ("Plan") in compliance with the Arizona Corporation Commission's ("Commission") Renewable Energy Standard ("RES") rules. UNS Electric is committed to reaching the RES targets for 2011 and beyond, and the Plan sets forth the Company's strategy for meeting its RES requirements. The Plan outlines key components of that strategy, including the renewable energy resources the Company will add through 2015, the customer funding and surcharge amounts necessary to acquire those resources, the programs the Company plans to implement, and the amounts budgeted for each program. UNS Electric seeks Commission approval of all elements of its Plan, as they are necessary in order for UNS Electric to meet its compliance obligations under the RES rules.

Pursuant to Arizona Administrative Code Rule 14-2-1801, *et seq.*, UNS Electric must obtain 3% of its 2011 annual retail sales from renewable resources by 2011, 25% of which must come from Distributed Generation ("DG"). In order to meet these requirements, UNS Electric will utilize existing utility-scale renewable generation, Purchase Power Agreements ("PPA") with renewable developers, short-term purchases of renewable energy, utility-owned renewable generation, the Community Solar Project, and DG incentive programs; the resulting renewable portfolio will include solar, wind, and biomass projects.

Highlights of the 2011 Plan include: (1) the School Vocational Program, a DG program that will provide three systems ranging in size from four to seven kilowatts to eligible high schools in the service territory; (2) the proposed Energy Efficiency Auditing Program, which is designed to promote energy efficiency in the home before a DG system is sized and installed; (3) the Zero-Net Energy Home ("ZEH") Pilot Program, an innovative project that integrates energy efficiency and renewable energy in the new home construction market; (4) the Bright Arizona Community Solar project, a community distributed solar energy project that will allow customers to purchase blocks of green energy; and (5) the Bright Arizona Solar Buildout Plan, which will

generate 1 megawatt ("MW") of solar annually through 2015.

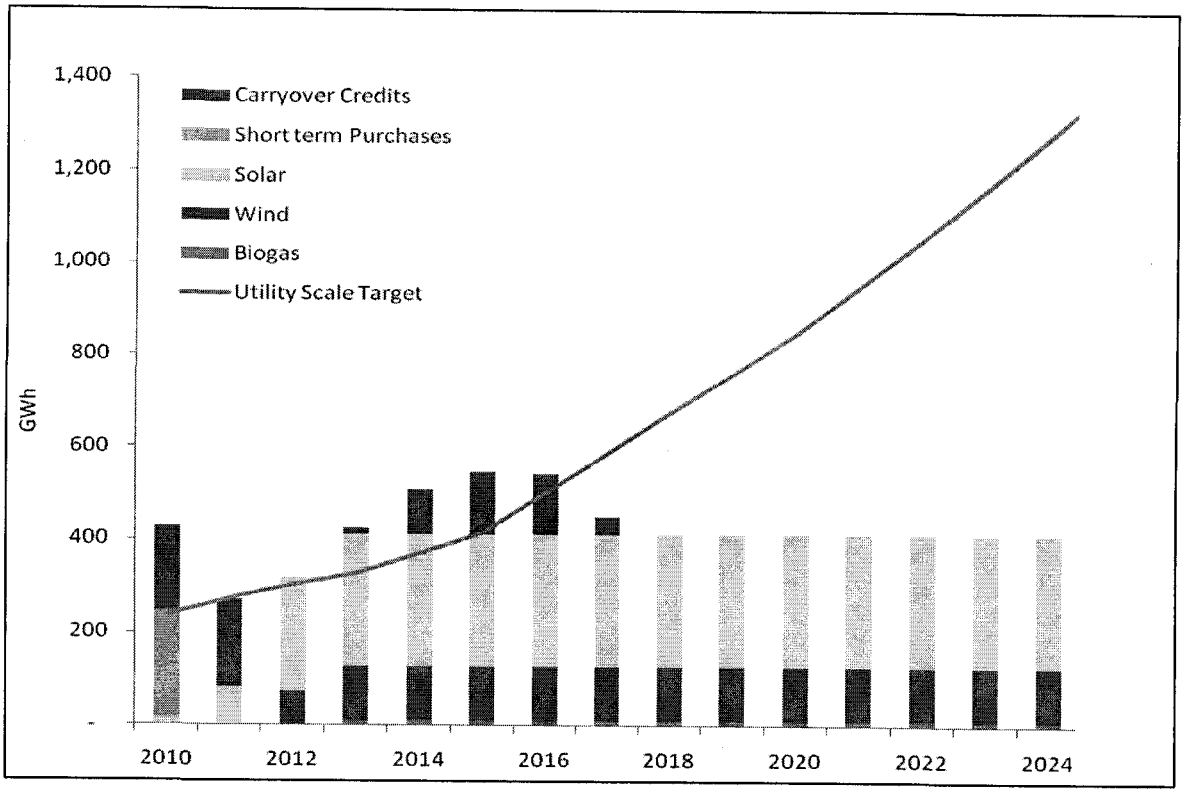
UNS Electric has aggressively sought to achieve 2011 RES compliance as cost effectively as possible. The estimated cost for 2011 RES related projects and programs is $11.7 million, with a five year total of $47.7 million. This RES funding is necessary to cover the cost of utility-scale renewable generation, incentive payments for distributed generation resources, marketing expenses, program implementation, and administration costs. At this time, UNS Electric requests recovery of approximately $11.7 million through its RES Tariff. UNS Electric believes that this Plan is a realistic strategy for complying with the RES requirements and provides the Commission with an important opportunity to foster renewable generation for the benefit of the Company's customers.

II. UNS ELECTRIC 2011 IMPLEMENTATION PLAN COMPONENTS

A. Utility-Scale Renewable Generation

The RES targets two resource categories, utility-scale generation and distributed generation. UNS Electric's total renewable generation requirement for 2011 is 3% of retail sales. UNS Electric will meet its 2011 utility-scale requirement with estimated total of 45,000 megawatt hours ("MWh") through a combination of PPAs on its own behalf and also with Tucson Electric Power Company ("TEP"). One such previously approved PPA, between UNS Electric and Western Wind, will generate 14,600 MWh of wind and 850 MWh of solar power annually for UNS Electric. The project has an expected in service date by the end of 2011 and will help UNS Electric to meet and possible exceed its utility-scale RES requirement through 2016, as shown in the chart below.

Chart 1. Renewable Energy Standard Targets



B. Bright Arizona Solar Buildout Plan

UNS Electric's Bright Arizona Solar Buildout Plan ("Buildout Plan") represents the small portion of the utility-scale requirement that will be met through a utility-owned program. The Buildout Plan, submitted for approval in the Company's pending rate case, Docket No. E-04204A-09-0206, is an essential component of the Company's renewable strategy. Because the bulk of the Company's utility-scale generation will be met through PPAs, the Buildout Plan provides much needed balance to the Company's renewable portfolio. Additionally, the Buildout Plan provides some measure of financial project certainty, which is critical to the Company's ability to meet its RES requirements. Many solar projects in Arizona have been stalled or delayed due to financing problems; this is troubling for the utilities that rely on those projects in order to remain in compliance with the RES. Utility-owned projects help to spread the risk of renewable projects between the renewable development community and UNS Electric; in turn, this accelerates the deployment and commercial operation of solar energy for all of Arizona

UNS Electric's Buildout Plan proposes utility ownership of approximately 20% of the renewable energy needed to meet the utility-scale generation portion of the RES; the balance will still be met through PPAs. The Buildout Plan proposes installation of 1.25 MW per year of utility-owned PV arrays from 2011 through 2014 for a total investment of $5 million, assuming an average installed per watt price of $4.00 (see Table 1). The Buildout Plan will utilize a competitive procurement and deployment process.

Table 1. Bright Arizona Solar Buildout Plan Investment Timeline

Year Installed	Year Recovered	Annual Capital Investment	MW Capacity
2011	2012	$5,000,000	1.25 MW
2012	2013	$5,000,000	1.25 MW
2013	2014	$5,000,000	1.25 MW
2014	2015	$5,000,000	1.25 MW
4-Year Total		**$20,000,000**	**5 MW**

The annual revenue requirement, including return on investment, depreciation, property taxes, and operations and maintenance ("O & M") expenses, as delineated in Table 2, will be recovered through the RES Tariff until the investment is included in rate base.

Table 2. Revenue Requirement for the Bright Arizona Solar Buildout Plan

Revenue Requirement	2012	2013	2014	2015
Carrying Costs	$365,169	$172,966	$365,169	$691,862
Book Depreciation	$250,000	$125,000	$250,000	$500,000
O & M	$50,000	$25,375	$50,000	$101,500
Total Revenue Requirement	**$665,169**	**$323,341**	**$665,169**	**$1,293,362**

Annual estimates of the Solar Buildout Plan's revenue requirement (to be included in the REST mechanism) are shown in Table 3.

Table 3. Estimated Annual REST Budget[1] for the Bright Arizona Solar Buildout Plan

Utility Owned Solar Projects by Year	2012	2013[2]	2014	2015
2012	$665,169	$157,048		
2013		$166,293		
2014			$665,169	$628,193
2015				$665,169
Annual Revenue Requirement	$665,169	$323,341	$665,169	$1,293,362

[1] This analysis uses the existing cost of capital and assumes that customers benefit from a 30% Federal investment tax credit.

[2] Assumes solar assets are included in rate base as of the first quarter of 2013.

C. Bright Arizona Community Solar Program

In this plan, UNS Electric seeks approval of the Bright Arizona Community Solar Program. This program consists of a voluntary customer tariff for community distributed solar energy that will fulfill a portion of the Company's DG RES requirement by allowing customers to purchase blocks of green energy in 150 kilowatt hour ("kWh") increments. UNS Electric will utilize solar power to generate the energy for this program. It has not yet been decided whether the power will come from a utility-owned project or from PPAs. Please see Exhibit 9 for detailed information.

D. Distributed Generation Incentive Program

UNS Electric looks forward to continuing the successful implementation of its DG programs. The Plan proposes $9.1 million in funding for the incentive programs, with annual increases to the program budget to accommodate both the increased DG energy target, and customer demand. The Plan uses the RES required 50/50 split of the DG requirement between the residential and commercial sectors, as shown in Exhibit 1. The DG program requirements and incentive levels are outlined in the Renewable Energy Credit Purchase Program ("RECPP"), included as Exhibit 5. Additions to the 2011 Plan include the School Vocational Program, the Energy Efficiency Auditing Program, and the ZEH Pilot Program. Each program is described below.

i. Renewable Energy Credit Purchase Program

The RECPP portion of UNS Electric's Plan targets three areas: (1) residential up-front incentives ("UFI"); (2) non-residential UFIs; and (3) non-residential performance based incentives ("PBI"). The projected cost of the RECPP is $8.3 million: $5.4 million for residential UFIs, $1.3 million for small commercial UFIs, and $1.6 million for large commercial PBIs. UNS Electric will fully satisfy the commercial portion of the RES's DG requirement through this program. Table 4 below outlines the 2011 incentive budget for each customer segment, including the MWh and MW achieved.

Table 4. UFI/PBI Budget and Forecast

Customer Segment	2011 Budget	Annual MWh	Annual MW
Residential UFI	$5,357,583	3,752	2.1
Small Commercial UFI	$1,342,948	1,147	0.64
Large Commercial PBI	$1,645,686	1,274	0.75

UNS Electric experienced great success with its UFI and PBI programs for 2010. Thus, the Company proposes the following refinements for its 2011 Plan. Residential incentives will be reduced from $3.00 per watt to $2.25 per watt. Small commercial incentives will be reduced from $2.50 per watt to $2.00 per watt, and the commercial hot water UFI-limit will be raised from 35,000 kWh to 400,000 kWh. The small commercial UFI budget will be separated from the residential UFI and commercial PBI budgets in order to ensure its viability, and the 2010 builder program will be replaced with the ZEH Pilot Program. Technical requirements for the RECPP will be updated, and three categories for larger PV systems will be implemented.

Incentives for these larger PV systems will be lowered to align them with current prices, as shown in Table 5. For more details on the RECPP, please see the attached Exhibit 5.

Table 5. Production Based Incentive Categories

PBI Category	Max REC Price
50-500 kW AC	$0.142
500-1000 KW AC	$0.122
Above 1 MW	$0.102

In order to keep the programs going throughout the year, and to avoid "wait list" issues, UNS Electric is also proposing an automatic trigger to further reduce incentives if the annualized pace of compliance for the residential and commercial UFI programs is exceeded early, as shown in Table 6.

Table 6. Automatic Incentive Reductions

Customer Segment	2010 Incentive	2011 Incentive	First Trigger (65% compliance on or before 6/30/2011)	Second Trigger (85% compliance on or before 9/30/2011)
Residential UFI	$3.00/watt	$2.25/watt	$2.00/watt	$1.75/watt
Small Commercial UFI	$2.50/watt	$2.00/watt	$1.75/watt	$1.50/watt

ii. School Vocational Program

In addition to the changes described above, UNS Electric plans to implement a DG program for eligible schools in its service territory. This program will provide three systems ranging in size from four to seven kilowatts to eligible high schools in the service territory. UNS Electric will supply and install the necessary system equipment in addition to creating and facilitating a vocational training program in coordination with state energy program training efforts supported by American Reinvestment Recovery Act funds. The program is designed so that the number of eligible high schools in a school district is proportional to the size of the district within UNS Electric's service territory to ensure that each district is eligible to receive at least one system. UNS Electric will work closely with district officials to determine appropriate sites. The estimated cost of this project is $75,000.

iii. Energy Efficiency Auditing Program

Because the importance of energy efficiency cannot be overlooked, UNS Electric is also proposing that a $0.20/watt incentive be added to the RECPP for customers making efficiency improvements to their homes prior to installing a DG system. In order to participate, homeowners must agree to have a UNS Electric-approved energy audit of their home prior to installing a DG system. Customers who make efficiency improvements based on the audit will have the cost of the audit returned to them in addition to receiving the $0.20/watt incentive. These measures are important because they will enable customers to purchase smaller PV systems than would otherwise be necessary. Once the efficiency improvements are made, customers will be able to operate their PV systems more efficiently

as the power will be servicing an efficient home. The estimated budget of this program is $200,000 assuming that half of all audits result in efficiency improvements.

iv. Zero-Net Energy Homes Pilot Program

UNS Electric's ZEH Pilot Program is an innovative renewable energy project integrating energy efficiency and renewable energy in the new home construction market. This program, approved by the Commission in Decision No. 71641 (April 14, 2010), is designed to promote the use of renewable energy technology, including PV and solar hot water, in the residential new home construction market.[3] The program will use funds from the Demand-Side Management Surcharge to incent builders to follow high-efficiency construction standards in their projects and to include renewable technology. Details of the ZEH Pilot Program can be found in Docket No. E-04204A-07-0365.

F. Market Cost of Comparable Conventional Generation

Consistent with the RES rules, UNS Electric calculates program expenses using the Market Cost of Comparable Conventional Generation ("MCCCG"). Details on the methodology for the MCCCG calculation are included in the attached Exhibit 3. The annual MCCCG rates are calculated in advance and stated as a single dollar per megawatt hour value by technology type. The expenses are based on the PPAs pricing after subtracting the corresponding MCCCG based on projected hourly energy profiles and are included in Exhibit 4 (confidential). The profiles are determined by UNS Electric's production cost model in coordination with the Company's annual Purchase Power and Fuel Adjustment Clause filing. The MCCCG will be included for wind, PV systems, concentrated solar with storage, and bio-fueled renewable resources.

---

[3] The ZEH Program is replacing the former Builder Credit Purchase or Guarantee Solar Program. The former program was designed as a temporary program to promote the use of renewable resources in the new home construction market until an integrated plan could be developed. Effective January 1, 2011, the ZEH Pilot Program will replace the Builder Credit Purchase Program.

III. The Plan Budget

As stated previously, the cost to implement UNS Electric's Plan will be $10.9 million. The Plan's detailed budget is attached as Exhibit 2. Within Exhibit 2 is a breakdown of the costs for purchased renewable energy, the DG programs, research and development, outside services support and reporting, technology, cost recovery of DG fixed costs,[4] and marketing. A high level budget is included in Table 7 below.

Table 7. Plan Budget by Category

Utility Scale	$	1,460,000
Residential UFI	$	5,358,000
Commercial UFI	$	1,343,000
Commercial PBI	$	1,646,000
School Vocational & Other Training	$	154,000
Marketing & Outreach	$	150,000
Other Costs (Metering, I.T., Reporting & Labor, and R&D)	$	1,255,000
TOTAL	**$**	**11,366,000**

IV. The 2011 RES Tariff

The Plan will impose a charge of $0.0091/kWh, with caps by customer class. The caps are developed using a past-approved methodology (proportional cap allocation). The Plan's tariff is set forth in the attached Exhibit 6. Below, in Table 8, is the Company's approved budget for 2010 and proposed budget for 2011 delineated by rate class. The Customer Self-Directed Tariff is set forth in the attached Exhibit 7.

---

[4] Cost Recovery of Distributed Generation Fixed Costs: The issue of unrecovered fixed costs resulting from both the RES and the newly proposed Energy Efficiency Rules ("EE Rules") has been an on-going topic with the Commission and all regulated utilities in 2009 and 2010. The Commission has been responsive to this concern and issued a Notice of Inquiry regarding disincentives and possible decoupling. The Commission is currently reviewing the matter fully and will decide how to proceed. The Company is submitting this request assuming that the issue of cost recovery for unrecovered fixed costs will be determined prior to adoption of the 2011 RES Implementation Plan.

Table 8. 2010/2011 RES Budget by Rate Class

Rate Class	2010 Approved REST Budget	2011 Proposed REST Budget
Residential	$4,781,326	$7,187,349
Commercial	$2,449,876	$3,587,912
Industrial & Mining	$596,908	$945,895
Lighting (PSHL)	$5,770	$7,955
Total	**$7,833,880**	**$11,729,963**

Table 9. Current and Proposed Rate Caps by Customer Class

Rate Class	Current Rates Caps	Proposed Rates Caps
Residential	$9.00	$14.07
Commercial	$140.00	$219.00
Industrial & Mining	$2,700.00	$4,223.00
Lighting (PSHL)	$140.00	$219.00
Per kWh to all Classes	**$0.0071**	**$0.0099**

V. Research and Development

In order to support the adoption of renewable energy, UNS Electric dedicates some of its current REST funding towards research and development. The Company has proposed $50,000 as a budget for research and development. UNS Electric plans to continue its commitment to furthering renewable energy research by participating in the following projects. For more detailed information on these projects see Exhibit 8.

A. Arizona Research Institute for Solar Energy

The Arizona Research Institute for Solar Energy ("AzRISE") at the University of Arizona conducts fundamental interdisciplinary solar energy research backed by accurate and realistic economic analyses. This research is pivotal to the deployment and practical implementation of solar energy solutions. UNS Electric believes this research is an important step in advancing the RES's goals. AzRISE support will cost $50,000.

Exhibit 1

Energy and Demand Forecast

Item	2011	2012	2013	2014	2015
RES Annual Renewable Energy Percentage	3.00%	3.50%	4.00%	4.50%	5.00%
Net Retail Energy Sales in MWh per Year	1,911,820	1,946,707	1,983,617	2,027,180	2,060,545
Renewable Energy Required - MWh	57,355	68,135	79,345	91,223	103,027
Minimum Distributed Energy %	25.00%	30.00%	30.00%	30.00%	30.00%
Minimum Distributed Energy MWh	14,339	20,440	23,803	27,367	30,908
Minimum Residential Distributed Energy %	12.50%	15.00%	15.00%	15.00%	15.00%
Minimum Residential Distributed Energy MWh cumulative	7,169	10,220	11,902	13,683	15,454
Incremental Residential DG Required MWh (or actual if available)	4,169	3,051	1,681	1,782	1,771
Estimated Residential DG MWh Cumulative (Include Reserved)	7,169	10,220	11,902	13,683	15,454
Maximum Commercial Distributed Energy %	12.50%	15.00%	15.00%	15.00%	15.00%
Maximum Commercial Distributed Energy MWh	7,169	10,220	11,902	13,683	15,454
Incremental Commercial DG Required MWh (or actual if available)	6,169	3,051	1,681	1,782	1,771
Estimated Commercial DG MWh Cumulative (Include Reserved)	7,169	10,220	11,902	13,683	15,454
2011 Commercial Target	2,549				
Annual PBI Budget	$180,971	$201,359	$205,142	$199,557	$180,603
Utility Scale Energy Requirment %	75.00%	70.00%	70.00%	70.00%	70.00%
Utility Scale Energy Requirement MWh	43,016	47,694	55,541	63,856	72,119
Incremental Utility Scale Required MWh	45,000	4,678	7,847	8,315	8,263
Residential PV UFI	$2.45	$2.00	$1.75	$1.75	$1.75
Small Commercial PV UFI	$2.00	$1.75	$1.50	$1.50	$1.50
Large Commerical PV PBI	$0.142	$0.132	$0.122	$0.112	$0.102
TEP DG Budget Requirements	2011	2012	2013	2014	2015
DG kWh required	14,338,650	20,440,424	23,803,404	27,366,930	30,908,175
Residential UFI cumulative required	7,169,325	10,220,212	11,901,702	13,683,465	15,454,088
Existing UFI kWh	3,000,000	7,169,325	10,220,212	11,901,702	13,683,465
UFI kWh required by year	4,169,325	3,050,887	1,681,490	1,781,763	1,770,623
PBI cumulative required	7,169,325	10,220,212	11,901,702	13,683,465	15,454,088
Existing PBI kWh	1,000,000	7,169,325	10,220,212	11,901,702	13,683,465
PBI kWh required by year	1,274,446	1,525,443	1,681,490	1,781,763	1,770,623
Total Incremental PBI MW	0.75	0.90	0.99	1.05	1.04
Small Comm carveout from overall commercial	1,274,446	1,525,443	1,681,490	1,781,763	1,770,623
Res PV%	90%	90%	90%	90%	90%
Res H2O%	10.0%	10.0%	10.0%	10.0%	10.0%
Small Comm PV %	90.0%	90.0%	90.0%	90.0%	90.0%
Small Comm H20 %	10.0%	10.0%	10.0%	10.0%	10.0%
Res PV kWh	3,752,393	2,745,798	1,513,341	1,603,587	1,593,560
Res H20 kWh	416,933	305,089	168,149	178,176	177,062
Small Comm PV kWh	1,147,002	1,372,899	1,513,341	1,603,587	1,593,560
Small Comm H20 kWh	127,445	152,544	168,149	178,176	177,062
Res PV kw (1800kWh/kW)	2,085	1,525	841	891	885
Res PV systems (4 kW average)	521	381	210	223	221
Small Comm PV kW	637	763	841	891	885
Small Comm PV systems (70 kW average)	9	11	12	13	13
Res H20 systems (2500 kWh average)	167	122	67	71	71
Small Comm H20 systems (20,000 kWh average)	6	8	8	9	9
Res PV Cost	$ 5,107,423	$ 3,050,887	$ 1,471,304	$ 1,559,043	$ 1,549,295
Res H20 Cost @ $1500 per system average	$ 250,160	$ 183,053	$ 100,889	$ 106,906	$ 106,237
Small Comm H20 Cost @ $10,750 per system average	$ 68,501	$ 81,993	$ 90,380	$ 95,770	$ 95,171
Small Comm PV Cost	$ 1,274,446	$ 1,334,763	$ 1,261,118	$ 1,336,322	$ 1,327,967
Total Cost Res UFI	**$5,357,583**	**$3,233,940**	**$1,572,193**	**$1,665,948**	**$1,655,532**
Total Cost Small Comm UFI	**$1,342,948**	**$1,416,756**	**$1,351,498**	**$1,432,092**	**$1,423,138**
Total UFI Cost	**$6,700,350**	**$4,650,695**	**$2,923,691**	**$3,098,040**	**$3,078,670**
Total Incremental PBI Cost	**$180,971**	**$201,359**	**$205,142**	**$199,557**	**$180,603**
Total PBI Cumulative Cost	**$1,645,686**	**$1,847,045**	**$2,052,187**	**$2,251,744**	**$2,432,348**
Total DG Incentive Cost	**$8,346,217**	**$6,497,740**	**$4,975,878**	**$5,349,785**	**$5,511,018**

	UFI Equivalent/Watt	PBI Equivalent/REC
Residential PV Incentive	$2.25	$0.14
Small Commercial PV Incentive	$2.00	$0.12
Large Commercial Incentive	$1.70 - $2.35	$0.102 - $0.142
Utiltiy Scale Projects	$1.00	$0.06

Exhibit 2

UNS Electric Renewable Energy Standard Tariff
Cost Recovery Factors Definition for 2011

Total REST Budget 2011:	**$**	**11,365,607**
Total REST Tariff Collection 2011:	**$**	**11,728,963**
Purchased Renewable Energy:		
Above Market Cost of Conventional Generation calculated annually on hourly data per MCCCG Matrix [aa]	$	1,440,000
Independent Auditor cost	$	10,000
Internal labor [ab]	$	10,000
Total	**$**	**1,460,000**
Customer Sited Distributed Renewable Energy:		
Up-front Incentive (UFI) (residential) [ba]	$	5,357,583
Up-front Incentive (UFI)(commercial) [bb]	$	1,342,948
Annual Performance-based Incentive (PBI) [bc]	$	1,645,686
Internal labor [bd]	$	413,000
External labor [be]	$	65,000
Annual meter reading cost [bf]	$	3,750
Support tools, materials, transportation and supply cost [bg]	$	35,000
Outside services and internal labor for outreach, marketing materials, education and website maintenance cost [bh]	$	150,000
Cost-of-service contracts for outside labor for inspections and maintenance [bi]	$	25,000
Loss of revenue from the fixed-cost portion of customer charges displaced by customer self generation [bj]	$	73,752
Customer Self-directed Program	$	-
Total	**$**	**9,111,719**
Technical Training:		
Schools Vocational Training Program	$	75,000
UNSE internal and contractor training costs [ca]	$	79,000
Total	**$**	**154,000**
Information Systems Integration Costs	**$**	**120,000**
Metering:		
Direct material cost for meters [da]	$	218,430
DG meter impact cost analysis [db]	$	100,000
Direct energy credit purchase cost (12 mo. True-up) [dc]	$	17,708
Total	**$**	**336,138**
Program Design, Reporting, and Adminstration:		
Annual Compliance Report and hearing cost [ea]	$	30,000
Annual Planning and Implementation Report and hearing cost [eb]	$	20,000
Analysis and Adminstration [ec]	$	50,000
AZ Solar website	$	30,000
Total	**$**	**130,000**
Renewable Energy Research and Development:		
Technology development projects [fa]	$	30,000
Support provided to University research projects (eg. AzRISE) [fb]	$	20,000
Dues and Fees	$	3,750
Total	**$**	**53,750**
2010 Program Cost (Total Budget)	**$**	**11,365,607**
Undercollection of REST Funds from 2009	**$**	**363,356**
Grand Total (to be collected in 2011 tariff)	**$**	**11,728,963**

Notes:

aa: 45,000 MWh @ $32.00 per MWh above cost of MCCCG – Purchased Power. Contracts are in addition to existing power purchase contracts, costs are incremental and caused by renewable purchased power contracts.

ab: Labor allocation for contract administration, settlement review, payment approval

ba: est. 521 PV systems, 167 SHW systems. See Exhibit 1

bb: est. 9 PV systems, 6 SHW systems. See Exhibit 1

bc: Commercial PBI: Solar PV – 100% * 1.27 GWh/yr/ @ $0.14.2 = $181K. Additional payments from 2008-2010 add $1.46M.

bd: Internal UNSE personnel - 5 FTE

be: 1 FTE contract Technical Assistants, other general consulting costs

bf: Historic cost basis

bg: Vehicle, small tools, and consumables for 1 mobile unit

bh: Direct-outreach education expense with providers. Includes media purchases, printing, and design.

bi: Used for annual inspections, customer support. Based on historic costs

bj: 2009 DG production of 1,229,205 kWh @ $0.06 for Fixed Cost Recovery Shortfall

ca: Includes costs for training and technical seminars in renewable technologies for UNSE employees

da: incremental costs for net meters, full costs for production meters, data monitors, disconnects, and meter panels

db: Energy analysais to collate data, prepare and review cost impacts and effect on lost revenues of net metering and potential system benefits

dc: Estimate based upon approx. 730 PV systems @ average 281 kWh credit @ $0.05 per kWh

ea: Historic cost basis, extrapolated to a larger program with more reporting factors.

eb: Historic cost basis, extrapolated to a larger program with more reporting factors.

ec: Historic cost basis, extrapolated to a larger program with more reporting factors.

fa: Estimated based upon project size and mix

fb: Funding support for projects to fund renewable research at such entities as AzRISE

Exhibit 3

UNS Electric Exhibit 3

Market Cost of Comparable Conventional Generation
2011 Renewable Energy Standard and Tariff

I. OVERVIEW

Consistent with the Renewable Energy Standard ("RES") Rules passed by the Arizona Corporation Commission ("Commission"), Unisource Electric, Inc.'s ("UNS Electric") Renewable Energy Standard and Tariff Implementation Plan contemplates recovery of expenses in excess of the Market Cost of Comparable Conventional Generation ("MCCCG"). The Commission provided guidance on defining MCCCG in the context of its RES Rules and identified the MCCCG as "the Affected Utility's energy and capacity cost of producing or procuring the incremental electricity that would be avoided by the resources used to meet the Annual Renewable Energy Requirement, taking into account hourly supply and demand circumstances. Avoided costs should include any avoided transmission, distribution, and environmental compliance costs." This exhibit defines the methodology for developing the MCCCG rate for the Company.

II. METHODOLOGY

Annual MCCCG rates shall be calculated in advance and stated as a single $/MWh value by renewable technology type. The renewable technology types will be based on projected hourly energy profiles for each type of renewable resource. Annual MCCCG rates will include renewable resources such as wind resources, photovoltaic systems, concentrated solar with storage, and bio-fueled resources. Specific MCCCG rates would be developed as needed when new renewable technologies or new purchase power agreements are added to the Company's renewable portfolio. Annual MCCCG rates will capture the value of the seasonality and time of day delivery by deriving an average of on and off peak dispatch costs weighted by on and off peak renewable generation. MCCCG rates shall be calculated each year using the companies production cost simulation software 'Planning & Risk', and will be done in coordination with the company's annual Purchase Power and Fuel Adjustment Clause ("PPFAC") filing. The hourly

MCCCG rate determination criteria are shown in Table 1 below by comparing the types of renewable generation with the resource dispatch type. All projected MCCCG hourly rates are based on a 'Planning & Risk' production cost simulation that forecasts adequate generation and transmission capacity to meet all firm load obligations including system reserve requirements. Finally, the cost of renewable generation above the annual MCCCG rates will be recovered through the REST Adjustor Mechanism.

Table 1 - MCCCG Hourly Rate Determination Matrix

<table>
<tr><td colspan="2"></td><td colspan="4">Types of Renewable Generation Resources</td></tr>
<tr><td rowspan="5">Resource Dispatch Type</td><td></td><td>Dispatchable Renewable Generation</td><td>Firm Renewable Generation</td><td>Non-Firm Renewable Generation</td><td>Curtailable Non Firm Renewable Generation</td></tr>
<tr><td>Wholesale sales transaction served from existing resource portfolio</td><td colspan="4" rowspan="2">The MCCCG rate will be based on projected incremental production costs to serve firm load and wholesale sales opportunities for that hour. Costs will include any projected transmission, distribution and environmental compliance costs.</td></tr>
<tr><td>No market transactions. Generation available from thermal resource portfolio.</td></tr>
<tr><td>Day, week or month ahead purchase transaction to serve firm load requirements.</td><td colspan="4">The MCCCG rate will be based on the projected day, week or month-ahead firm purchase power transactions committed for that hour. Costs will include any projected transmission, distribution and environmental compliance costs.</td></tr>
<tr><td>Spot market transaction to serve firm load requirements.</td><td colspan="4">The MCCCG rate will be based on the projected Palo Verde spot market price for that hour. Costs will include any projected transmission, distribution and environmental compliance costs.</td></tr>
</table>

III. CALCULATION

$$MCCCG_{on} = Annual\ Average\ On\ Peak\ MCCCG\ Rate = \frac{\sum_{i=1}^{8760} PR_i * G_i * X_i}{\sum_{i=1}^{8760} G_i * X_i}$$

$$MCCCG_{off} = Annual\ Average\ Off\ Peak\ MCCCG\ Rate = \frac{\sum_{i=1}^{8760} PR_i * G_i * (1 - X_i)}{\sum_{i=1}^{8760} G_i * (1 - X_i)}$$

$MCCCG_{Annual\ Rate}$ = Average of on and off peak MCCCG rate weighted by projected on and off peak renewable generation.

It is assumed that there is a specific MCCCG rate for each renewable technology type.

Where

PR_i = Projected Planning & Risk dispatch cost ($/MWh) for hour i=1,2,…,8760.

G_i = Projected energy generation in renewable technology resource profile for hour i=1,2,…,8760.

$$X_i = \begin{cases} 1\ if\ hour\ i\ is\ an\ on\ peak\ market\ hour \\ 0\ Otherwise \end{cases} \quad for\ i = 1,2,\ldots 8760$$

Table 3 – UNS Electric's 2011 MCCCG Annual Rates

Renewable Technology	MCCCG Annual Rates	$/MWh
	Solar PV	$62.88
	AZ Wind	$55.34
	Biomass	$57.23
	NM Wind	$55.70
	Solar CSP	$64.46

Exhibit 4

CONFIDENTIAL

Exhibit 5

UNS Electric, Inc.

2011
Renewable Energy Credit
Purchase Program

Table of Contents

RECPP Basics for Distributed Generation Projects

What is Distributed Generation (DG)?

Distributed Generation refers to renewable energy projects that are on the customer side of the meter. This means that the generation does not "plug" directly into the grid, but it is consumed by the customer. Typically, these systems are customer owned, but other ownership models such as leasing, service contracts, Energy Service Company may be used.

What is Net Metering?

Net Metering occurs when a UNSE customer installs a renewable energy electric generator, such as photovoltaics. These customers will be outfitted with a bi-directional meter and given a rate that allows them to collect a credit for the energy they "push" back onto the grid at their retail rate. Should the customer overproduce over the course of an entire year, the remaining credits are transitioned to a payment at the wholesale rate. Systems may not exceed 125% of connected load for that meter. Connected load is defined as maximum demand divided by **.6**. Customers should refer to the ACC Net Metering Rules at the ACC webpage for more information.

Why is UNSE involved with DG?

Like other utilities in Arizona, UNSE is mandated to replace a substantial portion of its retail sales with renewable energy. This comes in the form of utility-scale projects and distributed generation projects. In order to meet the DG mandate, UNSE must purchase Renewable Energy Credits (RECs) from its customers. UNSE does not own or build these systems, but incents them by purchasing the RECs. One REC is equivalent to 1 kWh.

How does UNSE get involved with DG?

UNSE provides up-front and performance-based DG programs for qualifying renewable energy generators. These programs include varying incentive payments by technology. The incentives are actually purchases of a Renewable Energy Credit (REC). UNSE uses the RECs purchased in order to meet ACC renewable energy mandates. Specifics for each qualifying technology can be found in the appropriate sections of this document. Note that UNSE payments for RECs are an incentive payment for RECs and are NOT A REBATE.

The Process for applying for and receiving incentive payments:

Residential and Small Non-Residential Projects – Up Front Incentives (UFI) only

Qualifying Technologies and size limits:

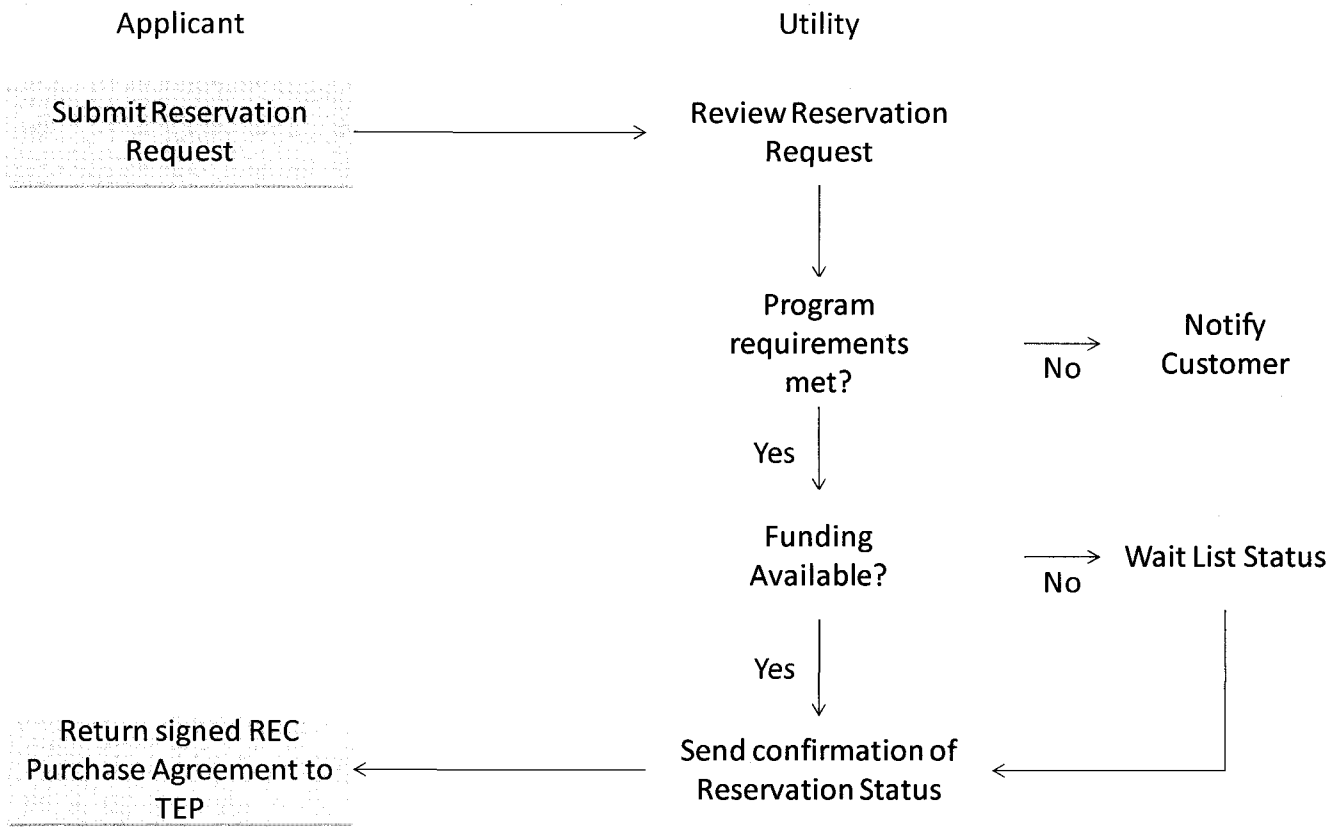
Residential solar PV less than 20 kW AC (28.4 kW DC)
Residential hot water and space heating
Residential and small non-residential ground source heat pumps up to 200 tons
Wind systems less than 1 MW AC

Small non-residential solar PV less than 50 kW AC (71 kW DC)
Small non-residential hot water/space heating less than 400,000 kWh estimated savings annually
Non-residential daylighting
Non-residential pool heating

Process for Applying for / Receiving Up-front Incentive (UFI) Payments

The process for obtaining up-front incentives from UNSE involves the flow of information between the applicant and UNSE. The following sections reflect the typical three-step process.

Step 1 – Reservation Request and Assignment of Reservation Status



The applicant must first submit the reservation request to UNSE.[1] The reservation request includes (at minimum) information about the UNSE customer on whose property the system will be located, the renewable energy system, the calculation of the incentive, and the installer of the system.

UNSE will review the reservation request to ensure the application conforms to program requirements.

- UFI Reservation requests are processed on a first-come, first-reserved basis.
- UFI Reservation requests will be reviewed within 30 days of the utility's receipt of the request.
- Reservation money may be set aside until the 4th quarter for technologies other than PV.

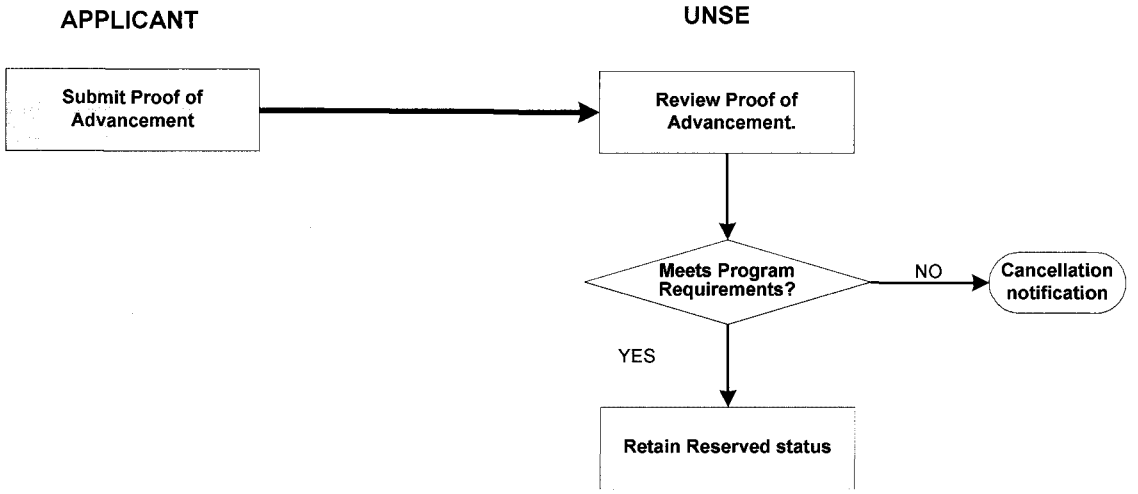
[1] Each technology has its own application available at uesaz.com/green.

If the reservation request is approved, UNSE will send a confirmation to the applicant. A reservation request may be denied for two different reasons, each with its own consequences:

- The reservation request may be denied because the request is not in compliance with program requirements (see specific sections below). In this case, UNSE will send notification to the applicant of the discrepancies and put the reservation in a "pending" status. The installer will have 14 days to provide the documentation required.
- The reservation request may be denied because it is not in conformance with program requirements. In this case, UNSE will send notice that the request is cancelled.
- The reservation request may be denied because funding is not available. In this case, UNSE will send a notification to the applicant that the request will be placed on a waiting list.

After reviewing the reservation request, UNSE will assign a reservation status.

Step 2 – Proof of Advancement

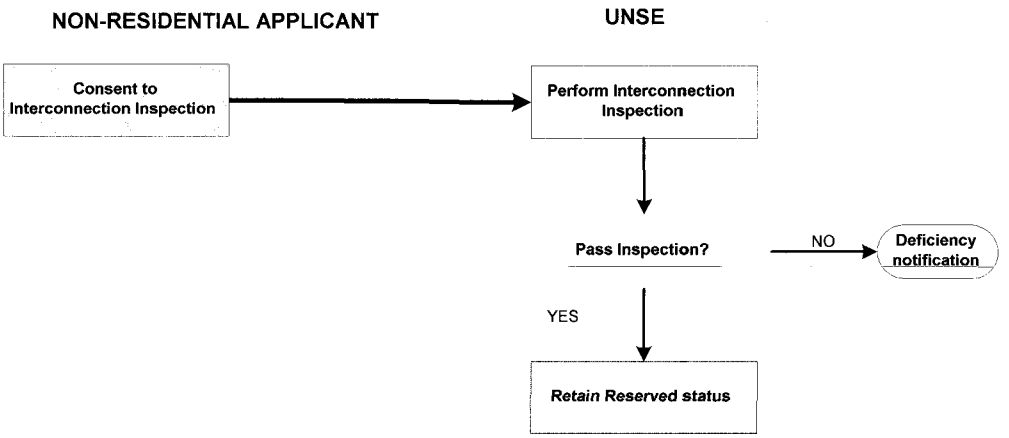


Applicants for UFIs must submit proof of project advancement to UNSE within 60 days of the date of reservation confirmation from UNSE to retain the reservation. UFI applicants must provide copies of city/county inspection permits to UNSE as documentation of the proof of project advancement. If those permits are not available within 60 days of the date of reservation confirmation, the applicant may also provide these documents in place of the permits:

- Signed agreement
- Assignment of Payment form
- Initial city/county-permit application or actual receipt of final acceptance inspection paperwork from the city/county.

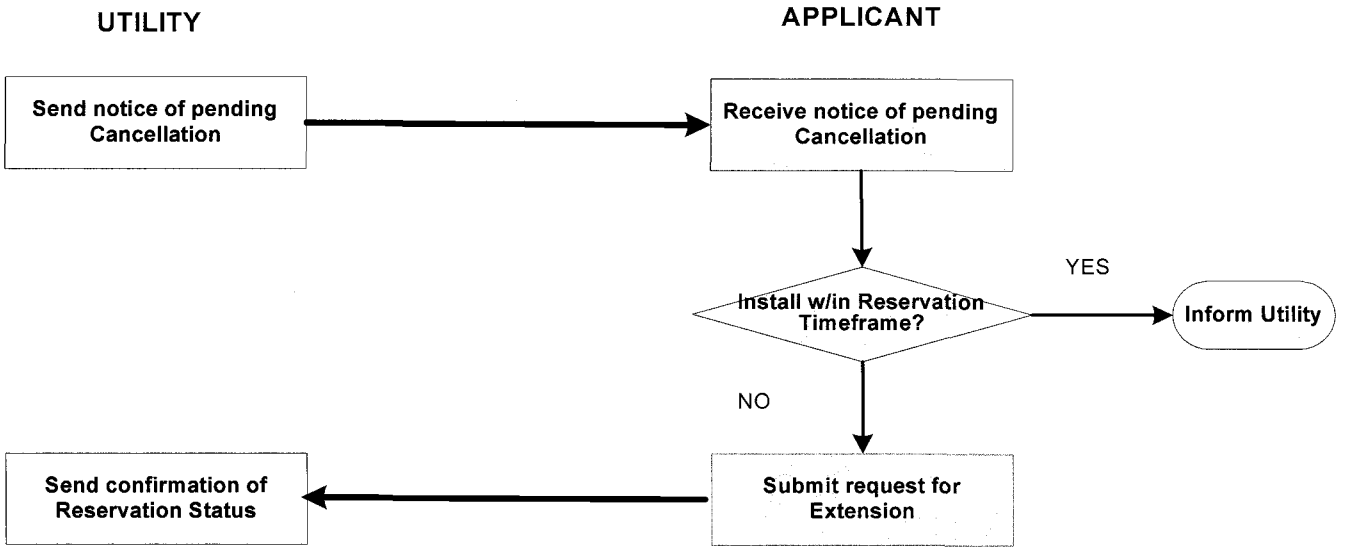
If proof of project advancement is not received within the specified timeframe, the applicant will be notified that the reservation is cancelled. The applicant has the option to reapply for funding after the reservation has been cancelled. The request will be processed in the same manner as a new project reservation and will be contingent upon availability of funding at the time the new application is received.

Step 3 – Interconnection Inspection (for UFI Grid-Tied Renewable Electrical Systems greater than 20 kW AC (28.4 kW DC) such as PV)



Non-residential grid-tied qualifying systems of electrical generating capacity must submit to and pass an interconnection inspection before the system can be commissioned. UNSE conducts the interconnection inspection and will notify the applicant of the results of the inspection. If the system passes the interconnection inspection, the application retains the reservation. The applicant can keep the reservation even if the system fails the initial interconnection inspection, as long as the deficiency is remedied within 30 days from the date of the reservation confirmation.

Conditional Step – Extension / Cancellation

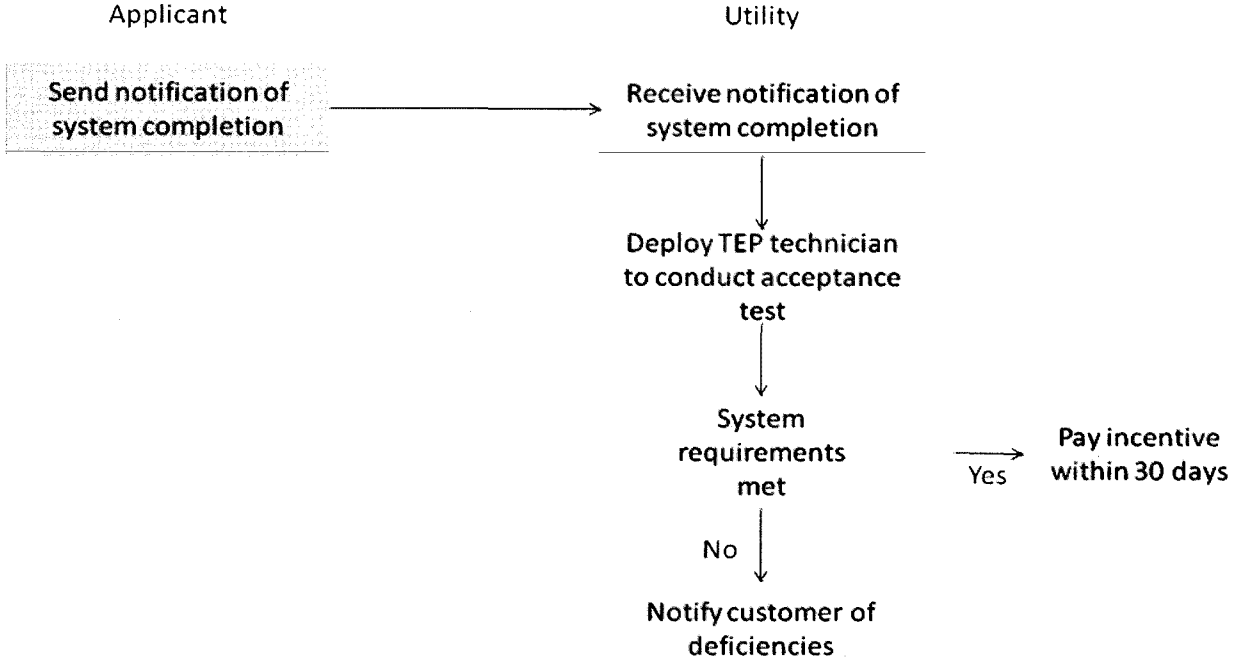


If all project requirements are not met within 180 days of the date of the reservation confirmation, the applicant must apply for an extension to remain eligible for the incentive. UNSE will trigger this request for extension with a notice of the pending cancellation 30 days prior to the date of scheduled cancellation. UNSE will grant an extension for up to 90 days following timely receipt of a customer's request for extension. UNSE may

approve written extension requests detailing the conditions for delay for periods beyond 90 days under extenuating circumstances. Email may be used considered an appropriate extension request.

If all program requirements have not been met within the reservation timeframe, a reservation request will be cancelled unless an extension is granted.

Step 4 – Customer Requests Payment



Upon project completion, the customer must notify UNSE that the system has been placed in service. This should be done by submitting a copy of the city/county final inspection permit. When UNSE receives notification that the system is complete, UNSE will perform an "acceptance test." The acceptance test requires that a UNSE inspector test the system's compliance with the required specifications and its performance and determine that it is in line with UNSE requirements.

If the system meets UNSE specifications and performance requirements, UNSE will pay the customer the up-front incentive ("UFI") within 30 days of the acceptance test. If the system fails to meet UNSE specifications and performance requirements, UNSE will notify the customer within **5** days of the acceptance test. The customer will then have **30** days to address the deficiencies and notify UNSE that the system is ready to be retested.

Large Non-Residential Projects – Performance Based Incentives (PBI) only

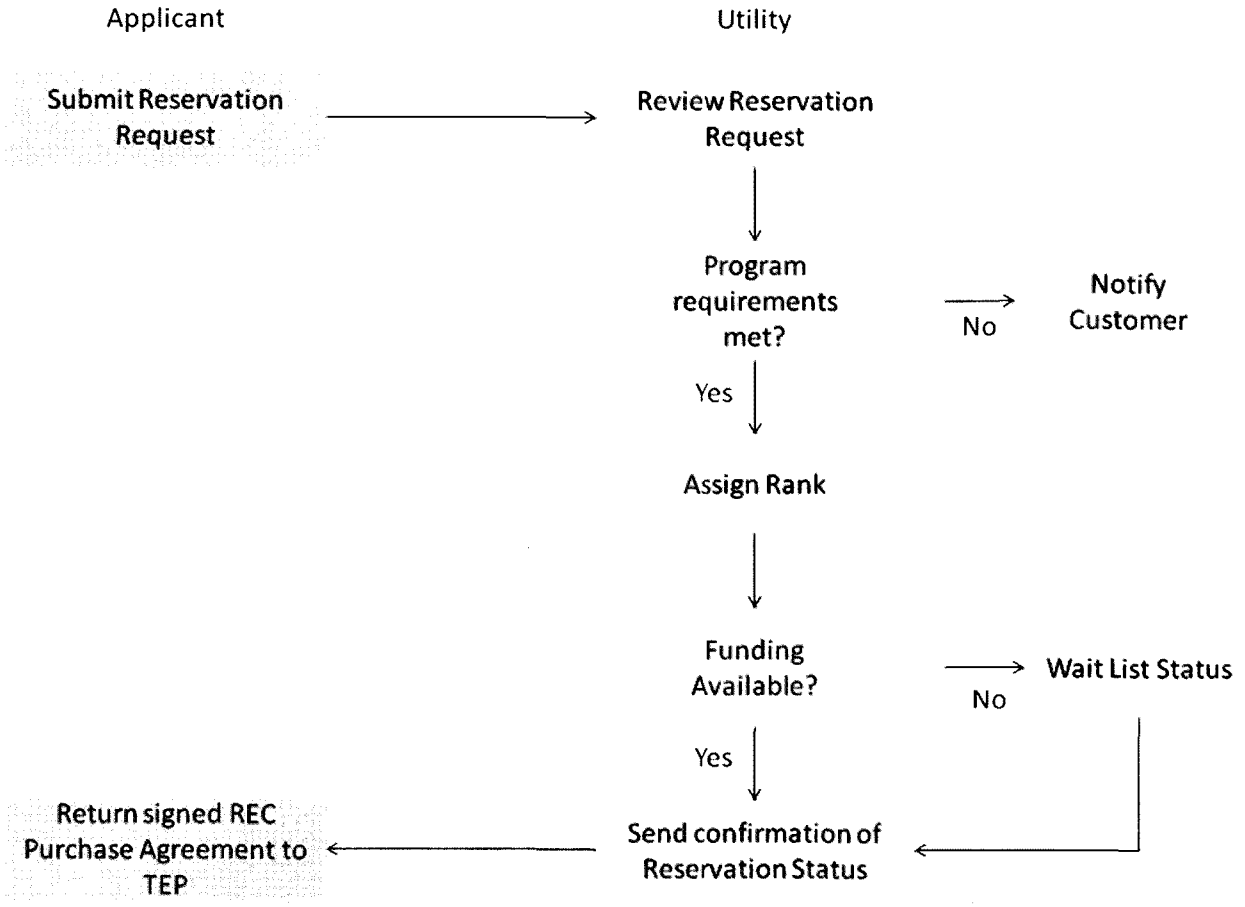
Qualifying Technologies and size limits:

Non-Residential Solar PV greater than 50 kW AC (71 kW DC)
Non-Residential Biomass/Biogas (Electric)
Non-Residential Biomass/Biogas – CHP (Electric)
Non-Residential Biomass/Biogas – CHP (Thermal)
Non-Residential Biomass/Biogas (thermal)
Non-Residential Biomass/Biogas (cooling)
Non-Residential Geothermal – (electric)
Non-Residential Geothermal – (thermal)
Non-Residential Small Hydro
Non-Residential Solar Space Cooling

Process for Applying for / Receiving PBI Incentive Payments

The process for obtaining incentives from UNSE involves the flow of information between the applicant and UNSE. The following sections reflect the typical five-step process.

Step 1 – Reservation Request and Assignment of Reservation Status



The applicant must first submit the reservation request to UNSE.[2] The reservation request includes information about the UNSE customer on whose property the system will be located, the Renewable Energy system, the calculation of the incentive, and the installer of the system.

UNSE will review the reservation request within 90 days of receipt of the request to ensure the application conforms to program requirements.

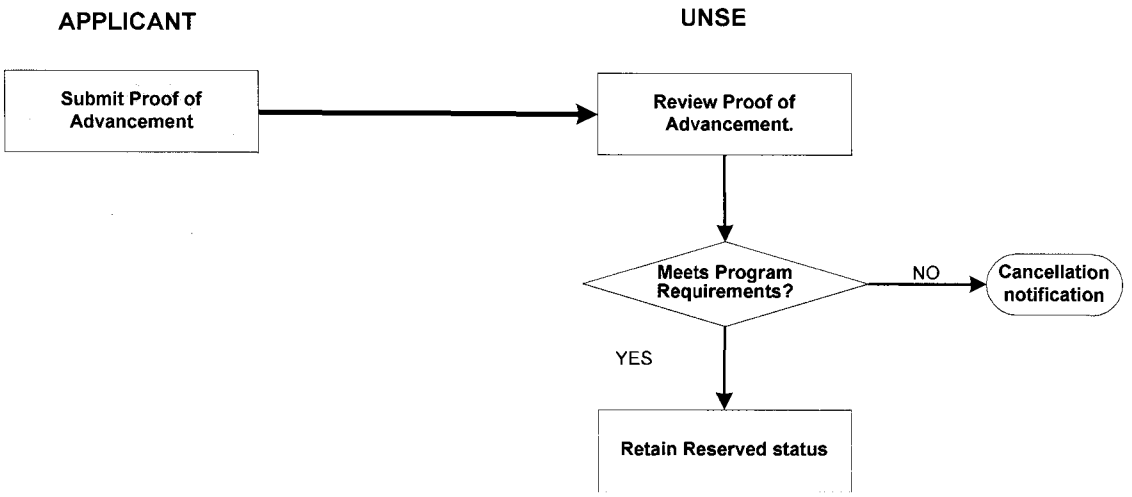
- PBI Reservation requests for non-residential systems are assigned a rank based on the lowest expected life cycle Renewable Energy Credit purchase cost and likelihood of construction.
- In the event of a tie in the ranking, when the program would be fully subscribed if both projects were given reservation status, funds will be awarded based on the date of receipt of the completed reservation request.

If the reservation request is approved, UNSE will send a confirmation to the applicant. A reservation request may be denied for two different reasons, each with its own consequences:

- The reservation request may be denied because it is not in conformance with program requirements. In this case, UNSE will send notice that the request is cancelled.
- The reservation request may be denied because funding is not available. In this case, UNSE will send a notification to the applicant that the request will be placed on a waiting list.

After reviewing the reservation request, UNSE will assign a reservation status.

Step 2 – Proof of Advancement



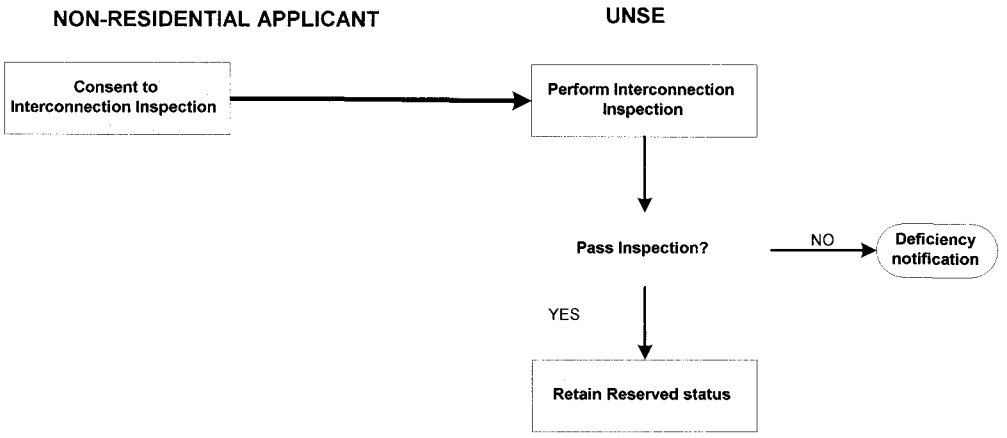
Applicants for non-residential PBI systems must submit proof of project advancement to UNSE within 120 days of the date of reservation confirmation from UNSE to retain the reservation. The Proof of Project Advancement documentation may include the following:

[2] Applications for each technology are available at uesaz.com/green.

- A project agreement (between customer and installer);
- An executed installation agreement including all project participants;
- Building and/or construction permits and/or a full set of design development or construction drawings (80% or more complete);
- An executed interconnection agreement (if applicable); and
- A letter from customer committing to utility-accepted in-service date.

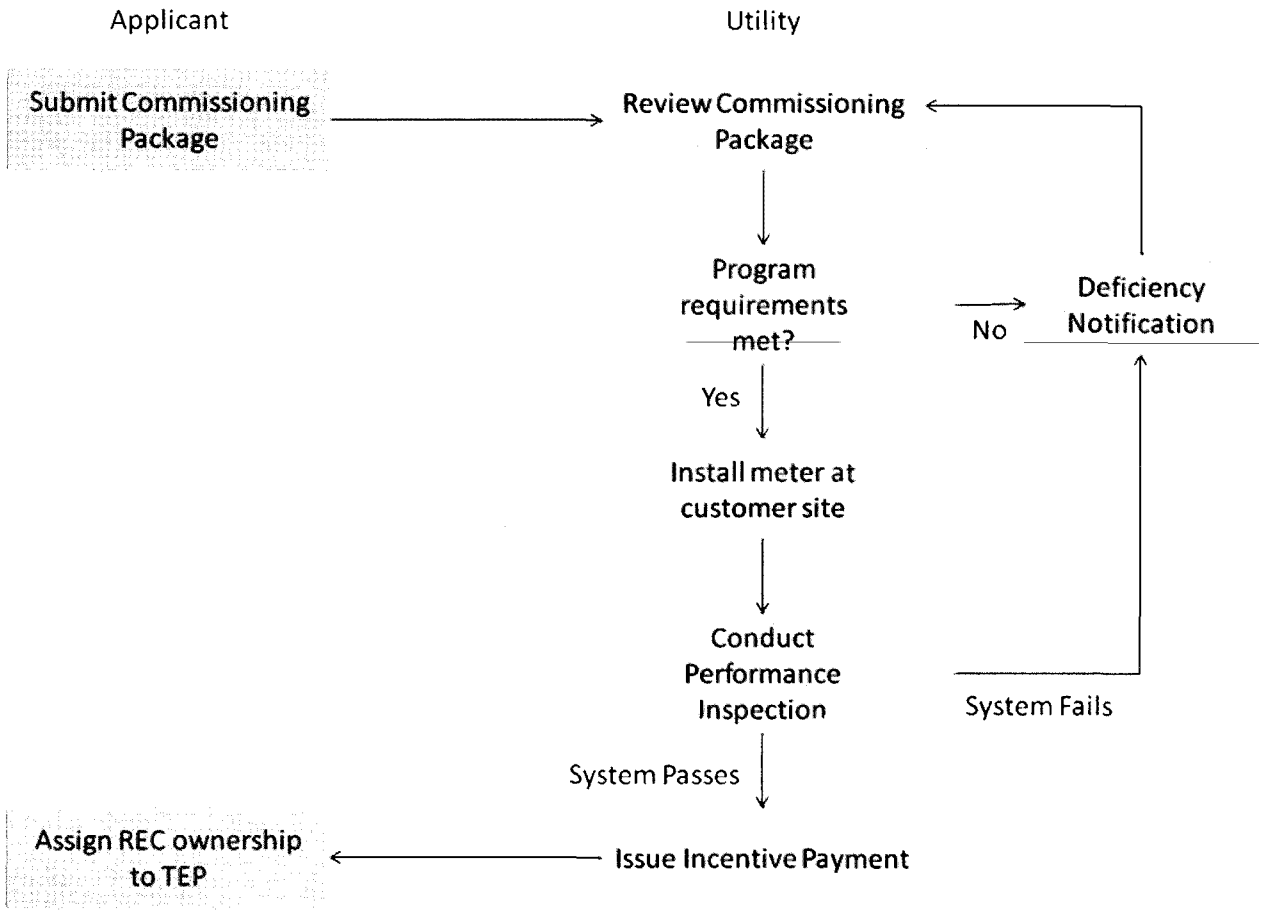
If proof of project advancement is not received within the specified timeframe, the customer will be notified that the reservation is cancelled. An appropriate written request for an extension may be requested if circumstances require. The applicant has the option to reapply for funding after the reservation has been cancelled. The request will be processed in the same manner as a new project reservation and will be contingent upon availability of funding at the time the new application is received. Email is accepted for requests for extension.

Step 3 – Interconnection Inspection (for PBI Grid-Tied Renewable Electrical Systems such as PV)



Non-residential grid-tied qualifying systems of electrical generating capacity must submit to and pass an interconnection inspection before the system can be commissioned. UNSE conducts the interconnection inspection and will notify the applicant of the results of the inspection. If the system passes the interconnection inspection, the application retains the reservation. The applicant can keep the reservation even if the system fails the initial interconnection inspection, as long as the deficiency is remedied within 120 days from the date of the reservation confirmation, as described in Step 2.

Step 4 – System Commissioning For Non-Residential PBI Systems



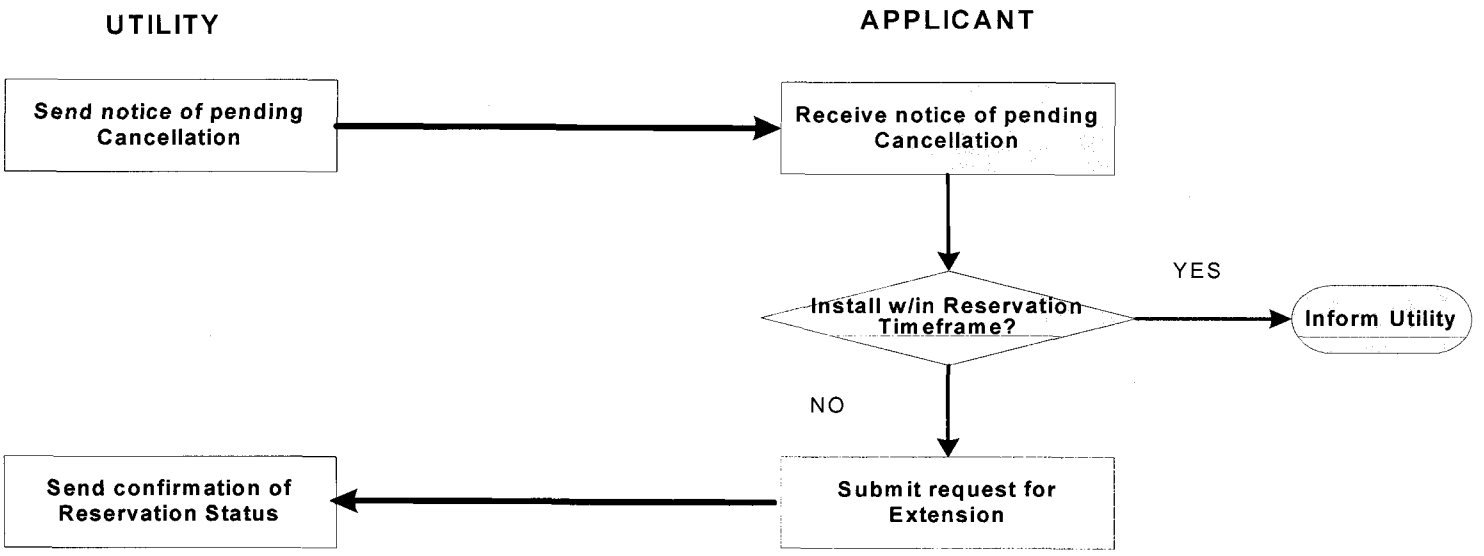
After the Non-Residential PBI system has been commissioned, the applicant must submit a commissioning package to UNSE. UNSE will review the commissioning package and confirm that all program requirements have been met, including passing the interconnection inspection (if applicable).

For electrical systems: after receiving the commissioning package, UNSE will dispatch a UNSE representative to install the meter at the system site. The meter will be certified according to the UNSE standards. The customer must provide access to the site during normal business hours so that the UNSE representative can install the meter.

For non-electrical systems, UNSE may allow customer to install appropriate meter according to technology-specific requirements.

In addition, UNSE may, at its discretion, perform a conformance inspection of the system. UNSE will notify the applicant of the scheduled conformance inspection and the applicant must make the system available for inspection. In most cases in which a conformance inspection is conducted, an incentive payment may not be issued until after a qualifying system has passed the conformance inspection.

Conditional Step – Extension / Cancellation



If all project requirements are not met within 365 days of the date of the reservation confirmation, the applicant must apply for an extension to remain eligible for the incentive. UNSE will trigger this request for extension with a notice of the pending cancellation 60 days prior to the date of scheduled cancellation. UNSE will grant an extension for up to 90 days following timely receipt of a customer's request for extension. UNSE may approve written extension requests detailing the conditions for delay for periods beyond 90 days under extenuating circumstances, or for systems larger than 1 MW.

If all program requirements have not been met within the reservation timeframe, a reservation request will be cancelled unless an extension is granted.

Step 5 – Incentive Payment is Disbursed

All PBI Project Agreements will include the following terms:

1. A project agreement between the applicant(s) and UNSE that details the assignment of energy and RECs, and the assignment of payment must be completed before payments can be disbursed.
2. At a minimum, quarterly meter reads will be performed by UNSE and quarterly payments will be made to the assigned payee within 30 days of the meter reading based on quarterly kWh production. If the payment due is less than $25.00, it will be held for the next payment period.
3. PBI payments will begin with the first quarterly production following receipt of the completed system commissioning package and conformance inspection, if required, and continue for the life of the agreement term. As part of this provision, it is understood that systems commissioned mid-quarter will receive payment only for the production of that partial quarter.

UNSE's payment of a PBI will assure UNSE complete and irrevocable ownership of the REC for the full duration of the PBI agreement. The agreement duration must fully coincide with the PBI payment schedule and the system must be supported by system warranty or planned maintenance schedules for the term of the agreement.

Community Solar Option

UNSE also offers the Community Solar Program. This Program is intended to be an alternative for UNSE customers who do not wish to operate a distributed generation system, but still want to replace some or all of their electrical purchases with renewable energy.

What the RECPP Does NOT Do:

This program does not accommodate non-customer sited projects for any reason. "Solar Farms" or other utility-scale generation projects do not qualify and should be referred to UNSE's annual RFP for Renewable Energy. Information regarding this RFP may be found at: *uesaz.com*.

Solar Electric: Residential Projects 20 kW AC (28.4 kW DC) or Less and Non-Residential Projects 50 kW AC (71 kW DC) or Less

Incentive Levels for Residential Solar Electric Systems and Non-Residential Systems 50 kW AC or Less

Residential Solar Electric systems and Non-Residential Solar Electric systems 50 kW AC or less are eligible for UFIs. UFIs are those incentives where the customer receives a one-time payment based on the system's designed capacity.

Table 1 identifies the incentives available for Residential Solar Electric systems and Non-Residential Solar Electric systems 50 kW AC or less.

Table 1. Up-Front Incentives ($/Watt) for On-Grid Residential Smaller than 20 kW AC, On-Grid Non-Residential 50 kW AC or Less, and Off-Grid Solar Electric Systems

Year	Residential	Small Non-Residential	Off-Grid
2011	$2.25/W DC	$2.00	$2.00

Notes:

- On-Grid Residential customers will receive a UFI up to a cap of 20 kW AC (28.4 kW DC). If a residential system is installed larger than 20 kW AC, UNSE will only provide an incentive payment for the first 20 kW AC.
- On-Grid Small non-residential customers will receive a UFI up to a cap of 50 kW AC (71 kW DC). If a small non-residential system is installed larger than 50 kW AC, it must apply under the large non-residential program.
- Off-Grid customers, residential or non-residential, will receive a UFI up to a cap of 4 kW AC.
- The UFI may not exceed 60% of Total System Cost.
- The customer must pay at least 15% of the project cost, after other government incentives (e.g., tax credits) are considered. (See explanation of incentive calculation below.)
- Systems may not be eligible to receive RECPP incentives if other utility incentives are applied.
- As described later in this document, these incentive levels may be decreased because of sub-optimal system positioning.

The incentive amount will be calculated at the time the application is approved for reservation. If federal or state incentives change during the period of time after the reservation approval, the incentive amount reserved will not be changed as long as the reservation is not cancelled.

In return for UNSE's payment of a UFI, UNSE will be given complete and irrevocable ownership of the RECs until December 31st of the 20th full calendar year after completion of installation of the system. Operational life during that time frame must be supported by system warranty or planned maintenance schedules.

PROJECT FUNDING

Funds will be made available for reservations on a first-come, first-reserved basis, until annual funding is fully reserved. Reservations which are rejected as a result of insufficient funds will be placed on a waiting list and offered the opportunity to retain their original reservation date for one additional quarter without the need to resubmit application documentation. If the incentive level has changed from the date of the original reservation to the date when the reservation is approved, the new incentive level shall be applied.

UNSE, at the discretion of Program Managers, institute a REST compliance trigger to reduce incentive levels. This trigger would result in a decrease of incentive based on percentage met of annual REST compliance. The trigger is a mechanism to protect the industry by helping to ensure that money is still available for the duration of the year.

UNSE will allocate funds to all qualifying technologies applying for residential and non-residential incentives. Non-PV categories may be protected from over spending in PV at the discretion of UNSE Program Managers. This would most likely be a 10% carve out for technologies other than PV for both classes of projects.

NET METERING

RECPP incentives can be applied to systems designed to serve only the typical load of the customer with whom the incentive agreement has been established. The assessment of that typical load does not preclude the periodic production of electricity in excess of the customer's demand. All projects must comply with ACC net metering rules.

PROJECT REQUIREMENTS AFTER INSTALLATION

After completing the installation of a Residential Solar Electric project or Non-Residential Solar Electric project 50 kW AC or less, the customer must continue to provide information to UNSE about the system's performance.

All customer systems receiving renewable energy self-generation incentives are obligated to include a UNSE-supplied production meter, which will report system production to UNSE in accordance with the regular meter-reading schedule. UNSE, at its option, may perform periodic inspection of the system for operation, metered production, and reporting purposes.

THE FINE PRINT

In addition to the other requirements described in this hand book, there are two other types of program details of which system owners and installers should be aware:

1. Installer qualifications
2. System removal

These are described in further detail below.

Installer Qualifications

All systems receiving incentives under the RECPP must be installed by a qualified installer. The following requirements must be submitted by the applicant as part of the reservation request. UNSE will verify that the installer meets the following minimum qualifications prior to confirming a reservation request:

1. 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. Alternatively, the installer must identify use of a contractor holding an appropriate license on file with the AZROC for the technology being installed. A copy of the AZROC license must be provided as part of the reservation request.
2. The installer must possess an Arizona business license that is active and in good standing.

Installers may request that the above information be retained on file with UNSE; however, under this option the installer must certify that the information on file remains current with the submission of each reservation request. Information on file must be renewed yearly.

System Removal

If receiving a UFI, neither the Qualifying System nor any components thereof shall be removed from the premises (by either the applicant or future owners or occupants of the property) until December 31st of the 20th full calendar year following completion of system installation of the renewable energy system, without express agreement of UNSE. If the Qualifying System is removed by any party in violation of this provision, customer shall immediately reimburse UNSE all incentive amounts paid by UNSE to customer or on behalf of customer to an authorized third party.

In addition, if a Qualified System is removed, UNSE shall monitor that specific customer site to ensure that an additional incentive is not provided for any new distributed renewable energy resource system on that site until the Renewable Energy Credit ("REC") contracted operational life of the original system has been completed.

ATTACHMENT A
System Qualifications for Residential Solar Electric Projects and Non-Residential Solar Electric Projects 50 kW AC or Less

All solar electric generating Customer Systems must meet the following system and installation requirements to qualify for UNS Electric, Inc.'s ("UNSE" or the "Company") Renewable Energy Credit Purchase Program ("RECPP"). Capitalized terms not defined herein shall have the meanings ascribed to them in the RECPP Agreement.

The following equipment qualifications listed are mandatory requirements which must be met at the time of project commissioning to receive a RECPP incentive. The installation guidance is intended to provide consumers with information on installation and operation practices which are most likely to support achieving the system's designed output. Installation guidance is mandated in order for a project to receive a RECPP incentive, as it does reflect both industry and UNSE concurrence on those practices which are important for a technology to best achieve the designed output. In the future, additional installation guidance items may be considered for inclusion as part of the equipment qualifications.

UNSE acknowledges that many regulations and site-specific requirements may apply to the installation of renewable energy technologies. UNSE agrees that no requirement imposed by these technology criteria shall be imposed in conflict with any other governmental requirements. Any RECPP-based requirement, which is in conflict with a site-specific governmental requirement, shall be detailed in the reservation request. All qualifying systems must adhere to the following requirements in addition to the RECPP program requirements:

Equipment Standards

1. The Customer System components must be certified as meeting the requirements of IEEE-929 - Recommended Practice for Utility Interface of Photovoltaic Systems.[3]

2. Photovoltaic components must be certified by a nationally recognized testing laboratory as meeting the requirements of UL-1703 - Standard for Flat Plate Photovoltaic Modules and Panels Systems and be covered by a non-prorated manufacturer's warranty of at least 20 years.

3. The inverter must be certified as meeting the requirements of IEEE-1547 - Recommended Practice for Utility Interface of Photovoltaic Systems, and it must be UL-1741 certified. Inverters must be covered by a manufacturer's warranty of at least ten years.

4. The Customer System design and installation must meet all requirements of the latest edition of the National Electrical Code, including Article 690 and all grounding, conductor, raceway, over-current protection, disconnect and labeling requirements.

5. All other electrical components must be UL listed.

[3] Some technology-specific criteria reference third party standards. The requirements of those standards are fully applicable when referenced as part of technology specific criteria. UNSE recognizes that new standards are likely to develop in the near future for technologies included in the RECPP, and recommends that the new standards are examined for application in this program definition as they become available.

6. The Customer System and installation must meet the requirements of all federal, state and local building codes and have been successfully inspected by the building official having jurisdiction. Accordingly, the installation must be completed in accordance with the requirements of the latest edition of National Electrical Code in effect in the jurisdiction where the installation is being completed (NEC), including, without limitation, Sections 200-6, 210-6, 230-70, 240-3, 250-26, 250-50, 250-122, all of Article 690 pertaining to Solar Photovoltaic Systems, thereof, all as amended and superseded.

7. The Customer System must meet Company and Arizona Corporation Commission interconnection requirements for self-generation equipment.
   See http://images.edocket.azcc.gov/docketpdf/0000074361.pdf for these requirements.

Installation requirements

1. A grid-connected Residential Customer System must have a total solar array nameplate rating of at least 845 watts AC (1,200 watts DC) and no more than 20,000 watts AC (28,400 watts DC).

2. The Customer System installation must meet the UNSE Service Requirements 2010 Edition, Page 1.20, as follows:

   "AN AC DISCONNECT MEANS SHALL BE PROVIDED ON ALL UNGROUNDED AC CONDUCTORS and SHALL CONSIST OF A LOCKABLE GANG OPERATED DISCONNECT CLEARLY INDICATING OPEN OR CLOSED. THE SWITCH SHALL BE VISUALLY INSPECTED TO DETERMINE THAT THE SWITCH IS OPEN. THE SWITCH SHALL BE CLEARLY LABELED STATING "DG SERVICE DISCONNECT."

3. The utility meter and utility disconnect will be installed in a location readily accessible by UNSE at all times.

4. Products must be installed according to manufacturers' recommendations.

5. The Customer System photovoltaic panels and modules must face within +/- 100 degrees of true south, and be substantially unshaded from 9 am to 3 pm. System arrays which are facing at an azimuth angle of more than 20 degrees from true south or shaded for more than one hour per day will be subject to a reduced amount of buydown payment per Attachment B.

6. The Customer System photovoltaic panels and modules must be fitted at an angle of 0 degrees to 60 degrees from horizontal. System arrays which are fitted with an elevation angle of less than 20 degrees or more than 35 degrees above horizontal will be subject to a reduced amount of buydown payment per Attachment B.

7. For Residential Customer Systems, Company shall furnish a meter, meter socket, and AC disconnect switch in accordance with UNSE SR-122 service requirements. Company shall install the meter. For Non-Residential customer systems, Company shall furnish and install the meter only. The meter socket and AC disconnect shall be installed in accordance with UNSE SR-122 service requirements. Installer must notify UNSE of wiring configuration so that Company may provide the appropriate 3-phase meter.

8. Total voltage drop on the DC and AC wiring from the furthest PV module to the AC meter will not exceed 2%.

9. PV panels and DC to AC inverter will be installed with sufficient clearance to allow for proper ventilation and cooling. At a minimum, manufacturer clearance recommendations will be observed. PV modules may be mounted less than 4 inches above any surface and an additional inch of clearance for each foot of continuous array surface area beyond four feet in the direction parallel to the mounting support surface, only in cases when arrays are flush-mounted to roof pitch. Otherwise, the four-inch spacing and an additional inch of clearance for each foot of continuous array surface area minimum is required.

10. Storage Batteries are not allowed as part of the Customer System unless the inverter is a separate component and UNSE can locate the Solar Meter at the inverter's output. If configured otherwise, battery losses will adversely reflect in the annual AC metered energy output. Customer's solar energy generation and energy storage system must meet the requirements of 2 and 3 of this Attachment A.

11. The DC to AC inverter used must provide maximum power point tracking for the full voltage and current range expected from the photovoltaic panels used and the temperature and solar insolation conditions expected in Tucson, Arizona.

12. The DC to AC inverter must be capable of adjusting to "sun splash" from all possible combinations of cloud fringe effects without interruption of electric production.

13. UNSE reserves the right to modify standards as technology changes on a case by case basis, pending independent laboratory analysis, Professional Engineer ("PE") stamp, or UNSE engineering analysis.

General Requirements

1. All Customer System installations must be completed in a professional, workmanlike and safe manner.

2. Installation must have been made after January 1, 1997.

3. The Customer must be connected to the Company's electric grid, except for approved off-grid systems in conformance with the RECPP.

4. Systems must be permitted and inspected by the jurisdiction having authority over construction projects in the customer's locale.

5. The project must comply with applicable local, state, and federal regulations.

6. Products must be installed according to manufacturers' recommendations.

7. Installations must meet applicable governmental statutes, codes, ordinances, and accepted engineering and installation practices.

8. All major system components must be new and must not have been previously placed in service in any other location or for any other application.

9. All renewable electricity generation systems must include a dedicated performance meter (provided by UNSE) which allows for measurement of system energy production. Certain other non-electric renewable energy production systems will require customer supplied metering for Performance Based Incentive ("PBI") payment calculation purposes.

10. PV system components shall be properly labeled, including AC & DC disconnects (if present), solar generation meter, service panel (outside cover), and breakers inside the service panel.

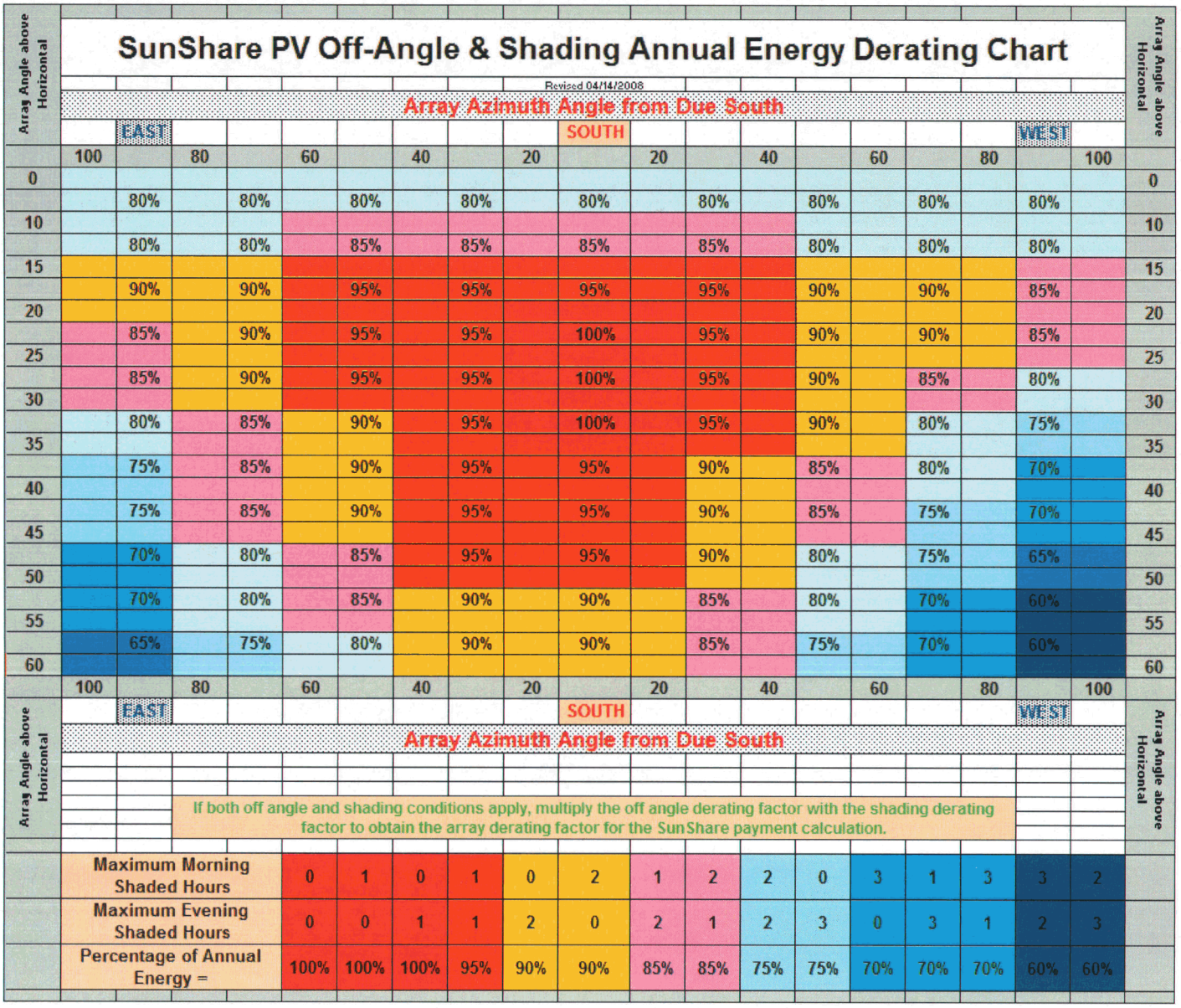
11. The system will in all cases have a material and full labor warranty of at least five years.

Additional Requirements for Off-Grid Systems

1. The minimum Solar Electric array size shall be no less than 422 watts AC (600 watts DC). The maximum Solar Electric array size for customers currently paying into the REST tariff shall not exceed 4,000 watts AC (5,680 watts DC). For customers not currently paying into the REST tariff, systems shall not exceed 2,000 watts AC (2,840 watts DC).

2. Off-grid systems will not be metered. Compliance reporting production will be based on an annual 20% capacity factor using nameplate DC rating for capacity.

ATTACHMENT B
SunShare Solar Electric Off-Angle & Shading Annual Energy Derating Chart



SunShare PV Off-Angle & Shading Annual Energy Derating Chart

Revised 04/14/2008

Array Azimuth Angle from Due South

Array Angle above Horizontal	EAST 100	80	60	40	20	SOUTH	20	40	60	80	WEST 100
0	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
10	80%	80%	85%	85%	85%	85%	85%	80%	80%	80%	80%
15	90%	90%	95%	95%	95%	95%	95%	90%	90%	85%	
20	85%	90%	95%	95%	100%	95%	90%	90%	85%		
25	85%	90%	95%	95%	100%	95%	90%	85%	80%		
30	80%	85%	90%	95%	100%	95%	90%	80%	75%		
35	75%	85%	90%	95%	95%	90%	85%	80%	70%		
40	75%	85%	90%	95%	95%	90%	85%	75%	70%		
45	70%	80%	85%	95%	95%	90%	80%	75%	65%		
50	70%	80%	85%	90%	90%	85%	80%	70%	60%		
55	65%	75%	80%	90%	90%	85%	75%	70%	60%		
60											

Array Azimuth Angle from Due South

If both off angle and shading conditions apply, multiply the off angle derating factor with the shading derating factor to obtain the array derating factor for the SunShare payment calculation.

Maximum Morning Shaded Hours	0	1	0	1	0	2	1	2	2	0	3	1	3	3	2
Maximum Evening Shaded Hours	0	0	1	1	2	0	2	1	2	3	0	3	1	2	3
Percentage of Annual Energy =	100%	100%	100%	95%	90%	90%	85%	85%	75%	75%	70%	70%	70%	60%	60%

Qualifying systems using Building Integrated Photovoltaic (BIPV) modules of total array capacity of 5 kW DC or less shall receive 90% of the UFI incentive value for PV systems listed in Attachment A. Systems using BIPV modules of total array capacity of greater than 5 kW DC shall be derated based on heating unless the applicant can demonstrate optimal performance.

Solar Electric: Non-Residential Projects Greater than 50 kW AC (71 kW DC)

Incentive Levels for Non-Residential Solar Electric Systems Greater Than 50 kW AC

Non-residential Solar Electric systems greater than 50 kW AC are eligible for performance-based incentives ("PBIs"). The PBI allows the customer to collect incentive payments in direct relation to the actual system production. Table 2 identifies the incentives available for non-residential Solar Electric systems larger than 50 kW AC.

In all cases, incentive values listed in Table 2 are maximum values. PBIs are awarded through a bid process, which is discussed later in this section. Applicants are encouraged to submit bids requesting incentive amounts less than the maximums listed. Bids requesting a lower level of incentive payment than the maximum will have an increased chance of acceptance in the allocation ranking process.

Table 2. Maximum Performance-Based Incentives for Non-Residential Projects Greater Than 50 kW AC (71 kW DC)

Maximum Incentive Levels for Specified REC Agreements of Specified Duration

51 – 500 kW AC (143 – 710 kW DC)			
Year	**10-year**	**15-year**	**20-year**
2011	$0.142	$0.142	$0.142
501 – 1000 kW AC (714 – 1,420 kW DC)			
Year	**10-year**	**15-year**	**20-year**
2011	$0.122	$0.122	$0.122
Greater than 1,000 kW AC (1,420 kW DC)			
Year	**10-year**	**15-year**	**20-year**
2011	$0.102	$0.102	$0.102

Notes:

- There is no incentive cap for non-residential systems other than program funding considerations.
- A PBI cannot exceed 60% of the real project costs, defined as the undiscounted total system cost plus acceptable financing charges. Acceptable finance charges are finance charges used for the PBI incentive cap calculation and cannot exceed the current prime interest rate plus 5%. Financing charges must be disclosed as part of the commissioning package, if not disclosed before.
- The customer must pay at least 15% of the project cost (as defined above), after other government incentives (e.g., tax credits) are considered. (See explanation of incentive calculation below.)
- Systems may not be eligible to receive RECPP incentives if other utility incentives are applied.

The incentive amount will be calculated at the time the application is approved for reservation. If federal or state incentives change during the period of time after the reservation approval, the incentive amount reserved will not be changed as long as the reservation is not cancelled.

UNSE's payment of a PBI will assure UNSE complete and irrevocable ownership of the REC for the full duration of the PBI agreement. The agreement duration must fully coincide with the PBI payment schedule and the system must be supported by system warranty or planned maintenance schedules for the term of the agreement. It is possible to request a shorter-than-20 year term and still give a 20 or greater year REC commitment. This may help position the project bid in a more competitive manner.

PROJECT FUNDING

Non-residential funds will be committed as bids are accepted; funds may be placed in reserve for later in the year. As a result, the budget may be committed before the end of the year. Funds will be made available to projects based on a ranking generated by lowest expected life cycle credit purchase cost, as provided in the application and verified by UNSE, as well as likelihood of construction. Projects submitted to the utility for reservation will be ranked based on a calculated index value for purposes of allocating non-residential funds as proposed in the application and verified by UNSE. Lowest lifecycle cost projects will be funded first. Indexing of the non-residential projects will be performed based on the verified incentive values and duration of the proposed agreement in the application for that project. In addition, the bid evaluator assesses the likelihood that the project will be completed. Projects with higher incentive payments result in a higher expected life cycle credit purchase cost and projects that produce more kWh result in a lower expected life cycle credit purchase cost. In the event of a tie in the ranking, when the program would be fully subscribed if both projects were given reservation status, funds will be awarded based on the date of receipt of the completed reservation request.

Reservation requests will reviewed by the utility on a monthly basis. Once reservation requests are fully ranked each month, notification of reservation approvals and rejections will be made in conformance with the rankings and available funding.

Reservations which are rejected as a result of insufficient program funds may elect to carry forward into the next period and retain the original reservation date. The election must be made at the time of the original application.

NET METERING

RECPP incentives can be applied to systems designed to serve only the typical load of the customer with whom the incentive agreement has been established. The assessment of that typical load does not preclude the periodic production of electricity in excess of the customer's demand. All projects must comply with ACC net metering rules.

PROJECT REQUIREMENTS AFTER INSTALLATION

All customer systems receiving renewable energy self-generation incentives are obligated to include a UNSE-supplied production meter, which will report system production to UNSE in accordance with the regular meter-reading schedule. UNSE, at its option, may perform periodic inspection of the system for operation, metered production, and reporting purposes.

THE FINE PRINT

In addition to the other requirements described in this hand book, there are two other types of program details of which system owners and installers should be aware:

1. Installer qualifications
2. System removal

These are described in further detail below.

Installer Qualifications

All systems receiving incentives under the RECPP must be installed by a qualified installer. The following requirements must be submitted by the applicant as part of the reservation request. UNSE will verify that the installer meets the following minimum qualifications prior to confirming a reservation request:

1. 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. Alternatively, the installer must identify use of a contractor holding an appropriate license on file with the AZROC for the technology being installed. A copy of the AZROC license must be provided as part of the reservation request.
2. The installer must possess an Arizona business license that is active and in good standing.

Installers may request that the above information be retained on file with UNSE; however, under this option the installer must certify that the information on file remains current with the submission of each reservation request. Information on file must be renewed yearly.

System Removal

If receiving a PBI, the Qualifying System or any components thereof shall not be removed from the premises until the last day of the final month of the final full calendar year of the applicable incentive payment term in the Agreement following completion of system installation of the renewable energy system, without express agreement from UNSE. If the Qualifying System is removed in violation of this provision, customer shall immediately reimburse UNSE all incentive amounts paid by UNSE to customer or on behalf of customer to an authorized third party.

In addition, if a Qualified System is removed, UNSE shall monitor that specific customer site to ensure that an additional incentive is not provided for any new distributed renewable energy resource system on that site until the REC contracted operational life of the original system has been completed.

UNSE shall attempt to monitor the number of missing or non-working distributed generation systems and shall summarize its observations in its annual Compliance Report.

ATTACHMENT A
Qualifications for Non-Residential Solar Electric Systems Greater Than 50 kW AC

All solar electric generating Customer Systems must meet the following system and installation requirements at the time of project commissioning to qualify for UNS Electric, Inc.'s ("UNSE" or the "Company") Renewable Energy Credit Purchase Program ("RECPP"). Capitalized terms not defined herein shall have the meanings ascribed to them in the RECPP Agreement.

The following equipment qualifications listed are mandatory requirements which must be met at the time of project commissioning to receive a RECPP incentive. The installation guidance is intended to provide consumers with information on installation and operation practices which are most likely to support achieving the system's designed output. Installation guidance is mandated in order for a project to receive a RECPP incentive, as it does reflect both industry and UNSE concurrence on those practices which are important for a technology to best achieve the designed output. In the future, additional installation guidance items may be considered for inclusion as part of the equipment qualifications.

UNSE acknowledges that many regulations and site-specific requirements may apply to the installation of renewable energy technologies. UNSE agrees that no requirement imposed by these technology criteria shall be imposed in conflict with any other governmental requirements. Any RECPP-based requirement which is in conflict with a site-specific governmental requirement shall be detailed in the reservation request. All qualifying systems must adhere to the following requirements in addition to the RECPP program requirements:

Equipment Standards

1. The Customer System components must be certified as meeting the requirements of IEEE-929 - Recommended Practice for Utility Interface of Photovoltaic Systems.[4]

2. Photovoltaic components must be certified by a nationally-recognized testing laboratory as meeting the requirements of UL-1703 - Standard for Flat Plate Photovoltaic Modules and Panels Systems; they must also be covered by a non-prorated manufacturer's warranty of at least 20 years.

3. The Customer System design and installation must meet all requirements of the latest edition of the National Electrical Code, including Article 690 and all grounding, conductor, raceway, over-current protection, disconnect and labeling requirements.

4. The inverter must be certified as meeting the requirements of IEEE-1547 - Recommended Practice for Utility Interface of Photovoltaic Systems and it must be UL-1741 certified. Inverters must be covered by a manufacturer's warranty of at least ten years.

5. All other electrical components must be UL listed.

[4] Some technology-specific criteria reference third party standards. The requirements of those standards are fully applicable when referenced as part of technology specific criteria. UNSE recognizes that new standards are likely to develop in the near future for technologies included in the RECPP and recommends that the new standards are examined for application in this program definition as they become available.

6. The Customer System and installation must meet the requirements of all federal, state and local building codes and have been successfully inspected by the building official having jurisdiction. Accordingly, the installation must be completed in accordance with the requirements of the latest edition of National Electrical Code in effect in the jurisdiction where the installation is being completed (NEC), including, without limitation, Sections 200-6, 210-6, 230-70, 240-3, 250-26, 250-50, 250-122, all of Article 690 pertaining to Solar Photovoltaic Systems, thereof, all as amended and superseded.

7. The Customer System must meet Company and Arizona Corporation Commission interconnection requirements for self-generation equipment.
   See http://images.edocket.azcc.gov/docketpdf/0000074361.pdf for these requirements.

Installation requirements

1. Any Non-Residential Customer System must have a total solar array nameplate rating of more than 1,200 watts DC.

2. The Customer System installation must meet the UNSE Service Requirements 2010 Edition, Page 1.20, as follows:

   "AN AC DISCONNECT MEANS SHALL BE PROVIDED ON ALL UNGROUNDED AC CONDUCTORS and SHALL CONSIST OF A LOCKABLE GANG OPERATED DISCONNECT CLEARLY INDICATING OPEN OR CLOSED. THE SWITCH SHALL BE VISUALLY INSPECTED TO DETERMINE THAT THE SWITCH IS OPEN. THE SWITCH SHALL BE CLEARLY LABELED STATING "DG SERVICE DISCONNECT."

3. The utility meter and utility disconnect will be installed in a location readily accessible by UNSE at all times.

4. Products must be installed according to manufacturers' recommendations.

5. For Non-Residential Customer Systems, Company shall provide the meter only, to be installed in a Customer supplied meter socket to be installed in a readily accessible outdoor location by the Customer between the DC to AC inverter and the connection to the over-current device in the Customer's electric service panel.

6. Total voltage drop on the DC and AC wiring from the furthest PV module to the AC meter will not exceed 2%.

7. PV panels and DC to AC inverter will be installed with sufficient clearance to allow for proper ventilation and cooling. At a minimum, manufacturer clearance recommendations will be observed. PV modules may be mounted less than 4 inches above any surface and an additional inch of clearance for each foot of continuous array surface area beyond four feet in the direction parallel to the mounting support surface only in cases when arrays are flush-mounted to roof pitch. Otherwise, the four-inch spacing and an additional inch of clearance for each foot of continuous array surface area minimum is required.

8. Storage Batteries are not allowed as part of the Customer System unless the inverter is a separate component and UNSE can locate the Solar Meter at the inverter's output. If configured otherwise, battery losses will adversely reflect in the annual AC metered energy output. Customer's solar energy generation and energy storage system must meet the requirements of 1 and **Error! Reference source not found.** under "Equipment Standards" of this Attachment A.

9. The DC to AC inverter used must provide maximum power point tracking for the full voltage and current range expected from the photovoltaic panels used and the temperature and solar insolation conditions expected in Tucson, Arizona.

10. The DC to AC inverter must be capable of adjusting to "sun splash" from all possible combinations of cloud fringe effects without interruption of electric production.

General Requirements

1. All Customer System installations must be completed in a professional, workmanlike and safe manner.

2. Installation must have been made after January 1, 1997.

3. The Customer must be connected to the Company's electric grid, except for approved off-grid systems in conformance with the RECPP.

4. Systems must be permitted and inspected by the jurisdiction having authority over construction projects in the customer's locale.

5. All major system components must be new and must not have been previously placed in service in any other location or for any other application.

6. The project must comply with applicable local, state, and federal regulations.

7. Products must be installed according to manufacturers' recommendations.

8. Installations must meet applicable governmental statutes, codes, ordinances, and accepted engineering and installation practices.

9. All renewable electricity generation systems must include a dedicated performance meter (provided by UNSE) which allows for measurement of system energy production. Certain other non-electric renewable energy production systems, noted below, will require customer supplied metering for PBI payment calculation purposes.

10. PV system components shall be properly labeled, including AC & DC disconnects (if present), solar generation meter, service panel (outside cover), and breakers inside the service panel.

11. If the qualifying system is grid-tied, the system must meet Arizona Corporation Commission Interconnection Requirements for Self-Generation Equipment.
See http://images.edocket.azcc.gov/docketpdf/0000074361.pdf for these requirements.

12. The system will in all cases have a material and full labor warranty of at least five years.

Requirements Specific to Non-Residential PV Systems Greater Than 50 kW AC

1. The Non-Residential Customer System shall be operating, substantially complete and have produced an AC output at least 70% of the total array nameplate DC rating at PTC .[5]

2. Operation, Maintenance and Repair. The Customer shall be solely responsible for the operation, maintenance and repair of the Non-Residential Customer System and any and all costs and expenses associated therewith. Company will notify Customer of all Non-Residential Customer System repairs the Company determines are reasonably necessary to support proper continued electrical production of the Non-Residential Customer System. The Customer will notify the Company within five (5) business days of its receipt of any such Company repair notice if the repair requires the installation of a new inverter and/or PV module. The Customer shall complete any such repair that affects the Non-Residential Customer System performance and does not require the purchase of a new inverter or PV module(s) within five (5) business days of the Company's notice of the need for such repair. For any such repair that does require the purchase and installation of a new inverter and/or PV module, the Customer shall promptly commence and diligently pursue such repair to completion, provided, in no event shall such repair take more than thirty (30) days to complete. At all times while Company is receiving the environmental credits from the Non-Residential Customer System, Customer shall clean all PV modules in the Non-Residential Customer System as necessary to keep them free from foreign material that would visibly obscure the modules, including any dirt and/or oils.

3. Non-Residential Customer System Security. At all times during and after installation of the Non-Residential Customer System, the Customer shall use commercially reasonable efforts to provide adequate security to prevent damage or vandalism to the Non-Residential Customer System.

4. Company shall provide Customer with a revenue grade AC meter to be installed between the Non-Residential Customer System and the grid interconnection. This meter will not be used for billing, but shall be used for any official Non-Residential Customer System production output data. Company will retain ownership of the meter and be responsible for its repair if needed.

5. Customer shall provide Company with all documentation reasonably requested by Company to demonstrate to the Commission that any environmental credits transferred under the Agreement were derived from an eligible technology, that the kWh generated are accurately reported and that the environmental credits have not expired or been used by any other entity for any purpose.
6. If certified proof cannot be provided of complete galvanic isolation of any and all DC from the AC output of the inverter(s) used in the Non-Residential Customer System through IEEE-1547 certification of the inverter, the Non-Residential Customer System shall include an isolation transformer installed between the inverter(s) and the grid interconnection. The transformer will be rated at full load continuous operation at 50 degrees C. at 125% of nameplate DC array rating and have an efficiency rating at nameplate DC array rating power of at least 98% as tested. The transformer will have at least one tap each of 2.5% and 5% both above and below the nominal voltage tap.

[5] PTC stands for "PVUSA Test Conditions." These standards are also referenced by the California Energy Commission. PTC conditions are based upon 1,000 W/m^2 solar irradiance, 20 degrees Celsius ambient temperature, and 1 m/s wind speed.

Additional Requirements for Off-Grid Systems

1. The minimum Solar Electric array size shall be no less than 422 watts AC (600 watts DC). For customers currently paying into the REST tariff the maximum Solar Electric array size shall not exceed 4,000 watts AC (5,680 watts DC). For customers currently not paying into the REST tariff, the maximum Solar Electric array size shall not exceed 2,000 watts AC (2,840 watts DC).

2. Off-grid systems will not be metered. Compliance reporting production will be based on an annual 20% capacity factor using nameplate DC rating for capacity.

Residential and Non-Residential Solar Water Heating and Space Heating 400,000 kWh Equivalent Annual Production per Year or Less, Non-Residential Solar Pool Heating

INCENTIVE LEVELS FOR RESIDENTIAL AND SMALL NON-RESIDENTIAL SOLAR WATER HEATING AND SPACE HEATING SYSTEMS, NON-RESIDENTIAL SOLAR POOL HEATING

Solar water heating and space heating in residential and small non-residential and non-residential solar pool heating applications are eligible for up-front incentives ("UFIs"). UFIs are those incentives where the customer receives a one-time payment based on the system's designed capacity. Table 3 identifies the incentives available for residential and small non-residential solar water heating and space heating systems.

Table 3. Incentives for Residential and Non-Residential Solar Water Heating and Space Heating

Year	Residential Incentive Level**	Non-Residential Incentive Level**
2011	$750 plus $0.25/kWh (max $1,750)	$750 plus $0.50/kWh (max $200,750)

Notes:

**Indicates estimated annual kWh production in first year.

Energy savings rating is based on the SRCC OG-300 published rating or the UNSE design analysis. Rate applies to forecast/measured first year energy savings only.

- Non-residential customers will receive a UFI up to a collector system size with output smaller than a 400,000 kWh equivalent. If a small non-residential system is installed beyond that threshold, it must apply under the large non-residential program.
- The UFI may not exceed 60% of total System Cost.
- The customer must pay at least 15% of the project cost, after other government incentives (e.g., tax credits) are considered. (See explanation of incentive calculation below.)
- Systems may not be eligible to receive RECPP incentives if other utility incentives are applied.
- The bid evaluator reserves the right to award incentives to solar thermal projects other than those that meet the specifications outlined in Attachment A. In these cases, the system output must be less than or equivalent to 400,000 kWh per year. Incentives in these cases will be determined by the bid evaluator.
- The process for determining annual kWh savings for non-residential solar pool heaters is this:
  1. Determine whether or not the system has an OG-100 rating. If it does not, it is not eligible for the program.
  2. If it does have an OG-100 rating, find an OG-300 rating for comparable set of collectors.
  3. Use Tucson data to find rated annual heat production for domestic water. (This calculation assumes 300 days on which useful heat is produced.)
  4. Multiply the annual savings determined by the OG-300 rating by (180/300). This adjustment reflects the fact that pool heaters in Tucson realistically only produce useful heat on 180 days each year.
  5. The result is anticipated annual kWh savings for the unit. This is multiplied by PBI level to calculate annual incentive. UNSE will retain the right to meter the system.

The incentive amount will be calculated at the time the application is approved for reservation. If federal or state incentives change during the period of time after the reservation approval, the incentive amount reserved will not be changed as long as the reservation is not cancelled.

In return for UNSE's payment of a UFI, UNSE will be given complete and irrevocable ownership of the RECs until December 31st of the 20th full calendar year after completion of installation of the system. Operational life during that time frame must be supported by system warranty or planned maintenance schedules.

PROJECT FUNDING

Funds will be made available for reservations on a first-come, first-reserved basis, until annual funding is reserved. Reservations which are rejected as a result of insufficient funds will be placed on a waiting list and offered the opportunity to retain their original reservation date for one additional quarter without the need to resubmit application documentation. If the incentive level has changed from the date of the original reservation to the date when the reservation is approved, the new incentive level shall be applied.

UNSE will allocate funds to all qualifying technologies applying for residential and non-residential incentives. Non-PV categories may be protected from over spending in PV at the discretion of UNSE Program Managers. This would most likely be a 10% carve out for technologies other than PV for both classes of projects.

THE FINE PRINT

In addition to the other requirements described in this hand book, there are two other types of program details of which system owners and installers should be aware:

1. Installer qualifications
2. System removal

These are described in further detail below.

Installer Qualifications

All systems receiving incentives under the RECPP must be installed by a qualified installer. The following requirements must be submitted by the applicant as part of the reservation request. UNSE will verify that the installer meets the following minimum qualifications prior to confirming a reservation request:

1. 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. Alternatively, the installer must identify use of a contractor holding an appropriate license on file with the AZROC for the technology being installed. A copy of the AZROC license must be provided as part of the reservation request.
2. The installer must possess an Arizona business license that is active and in good standing.

Installers may request that the above information be retained on file with UNSE; however, under this option the installer must certify that the information on file remains current with the submission of each reservation request. Information on file must be renewed yearly.

System Removal

If receiving a UFI, neither the Qualifying System nor any components thereof shall be removed from the premises (by either the applicant or future owners or occupants of the property) until December 31st of the 20th full calendar year following completion of system installation of the renewable energy system, without express agreement of UNSE. If the Qualifying System is removed by any party in violation of this provision, customer shall immediately reimburse UNSE all incentive amounts paid by UNSE to customer or on behalf of customer to an authorized third party.

In addition, if a Qualified System is removed, UNSE shall monitor that specific customer site to ensure that an additional incentive is not provided for any new distributed renewable energy resource system on that site until the REC contracted operational life of the original system has been completed.

UNSE shall attempt to monitor the number of missing or non-working distributed generation systems and shall summarize its observations in its annual Compliance Report.

Attachment A
Qualifications for Residential and Small Non-Residential Solar Water Heating and Space Heating

The following equipment qualifications listed are mandatory requirements which must be met at the time of project commissioning to receive a RECPP incentive. The installation guidance is intended to provide consumers with information on installation and operation practices which are most likely to support achieving the system's designed output. Installation guidance is mandated in order for a project to receive a RECPP incentive, as it does reflect both industry and UNSE concurrence on those practices which are important for a technology to best achieve the designed output. In the future, additional installation guidance items may be considered for inclusion as part of the equipment qualifications.

UNSE acknowledges that many regulations and site-specific requirements may apply to the installation of renewable energy technologies. UNSE agrees that no requirement imposed by these technology criteria shall be imposed in conflict with any other governmental requirements. Any RECPP-based requirement which is in conflict with a site-specific governmental requirement shall be detailed in the reservation request. All qualifying systems must adhere to the following requirements in addition to the RECPP program requirements:

Equipment Specifications

1. Domestic Solar Water Heating systems will be rated by the SRCC and meet the OG-300 system standard. Systems that include OG-100 collectors, but are not certified under OG-300, will need to be verified by submitting either a testing certification for a substantially similar system prepared by a publicly funded laboratory or by submitting an engineering report stamped by a registered third-party professional engineer detailing annual energy savings. Solar Space Heating systems will utilize OG-100 collectors.
2. Solar Space Heating systems will be sized in conformance with the Solar Space Heating Incentive Calculation Procedure (Attachment B.) Compliance reporting production will be based on the design energy savings submitted at time of application.
3. Active, open-loop systems are not eligible for RECPP 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 and prevents stagnation temperatures that exceed 250 degrees Fahrenheit ("F"). under all conditions at the location of installation. Details disclosing conformance with this exception shall be submitted as part of the manufacturer's verification documentation.
4. The 'high' limit on all Domestic Water Heating controllers shall be set no higher than 160 degrees F.
5. Active thermal storage for solar space heating systems shall use water as the storage element.
6. Contractors must provide a minimum of a five year equipment warranty as provided by the system manufacturer, including a minimum warranty period of five years for repair/replacement service to the customer.
7. Domestic Water Heating systems that are installed as an addition to an existing system or are submitted as a customer designed system or not certified to OG-300 must be specifically reviewed and approved by the utility.
8. The solar collector, heat exchangers, and storage elements shall have an equipment warranty of at least 5 years to qualify for a UFI and at least five years to qualify either for a UFI or for a PBI.

Installation Guidance

1. The system shall be installed with a horizontal tilt angle between 20 degrees and 60 degrees (40 and 60 degrees for space heating applications), and an azimuth angle of +/- 60 degrees of due south (+/- 20 degrees for space heating applications). 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. Azimuth or tilt angles outside these parameters may be reviewed and approved by the utility, at their discretion.
2. All systems should be installed such that the energy collection system is substantially unshaded and should have substantially unobstructed exposure to direct sunlight between the hours of 9:00 a.m. and 3:00 p.m. Solar Hot Water de-rating chart (see Attachment C and D in this section) may be used to adjust incentive level based upon affected output due to shading.
3. Heat exchange fluid in glycol systems should be tested, flushed and refilled with new fluid as necessary or at a minimum every five years or sooner per manufacturer's recommendations.
4. It is recommended that the anode rod be checked and replaced per manufacturer's recommendations, but no less frequently than every five years.
5. It is recommended that the system design include a timer, switch, and a temperature sensor on the backup element of the storage tank.
6. 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.
7. It is recommended that in areas where water quality problems are reported to have reduced the expected life of a solar water heater, that a water quality test is performed for each residence to screen for materials that through interaction with the materials of the proposed solar water heating system may reduce the expected operational life of the system components. The customer should consider contacting the manufacturer to determine if warranty or operational life will be affected.
8. In areas subject to snow accumulation, sufficient clearance will be provided to allow a 12" snowfall to be shed from a solar collector without shadowing any part of the collector.
9. Ball valves shall be used throughout the system. Gate valves shall not be used in any new installation systems.
10. Pipes carrying heated fluids shall be insulated for thermal energy conservation as well as personnel protection when exposed to ambient conditions, although this is highly recommended in either situation.
11. UNSE reserves the right to modify standards as technology changes on a case by case basis, pending independent laboratory analysis, Professional Engineer ("PE") stamp, or UNSE engineering analysis.

General Requirements

1. The project must comply with applicable local, state, and federal regulations.
2. Products must be installed according to manufacturers' recommendations.
3. Installations must meet applicable governmental statutes, codes, ordinances, and accepted engineering and installation practices.
4. Systems must be permitted and inspected by the jurisdiction having authority over construction projects in the customer's locale on new installations.
5. All major system components must be new and must not have been previously placed in service in any other location or for any other application.
6. All renewable electricity generation systems must include a dedicated performance meter (provided by UNSE) which allows for measurement of system energy production. Certain other non-electric

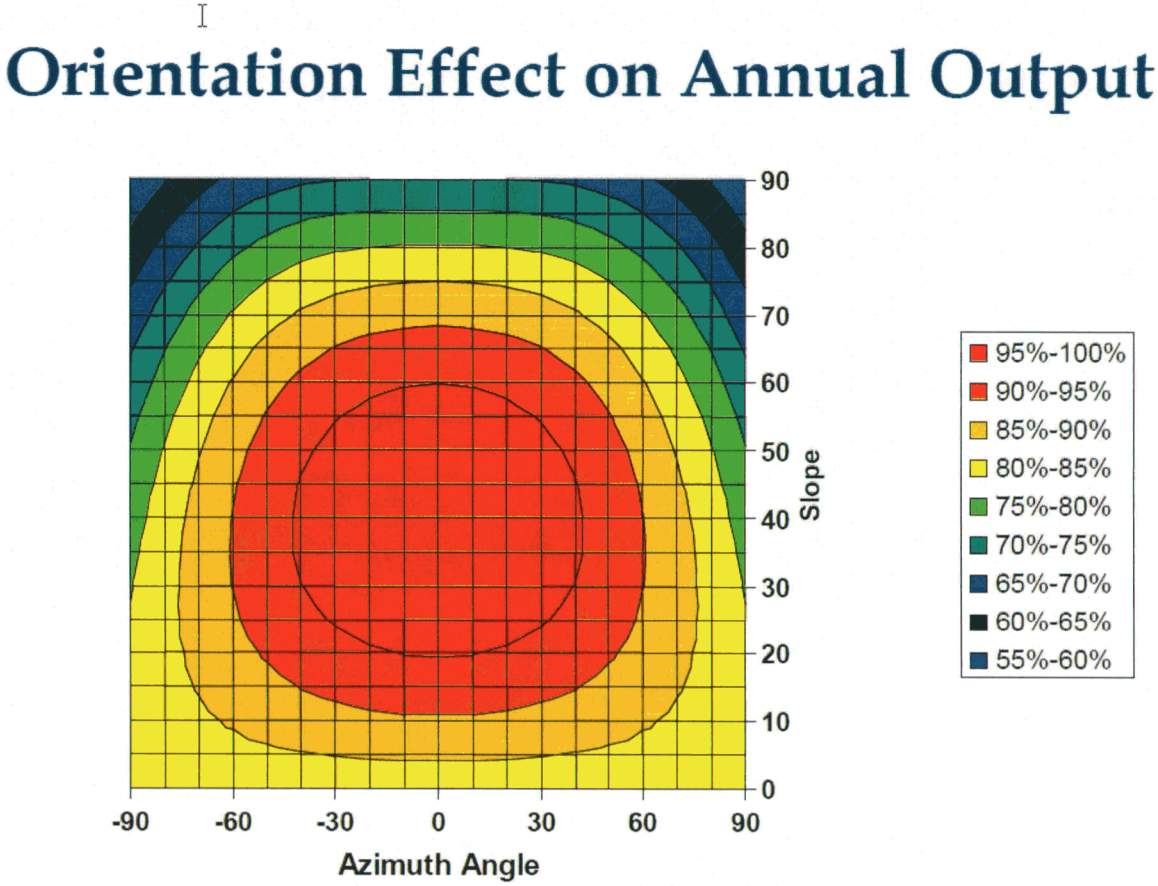
renewable energy production systems, noted below, will require customer supplied metering for PBI payment calculation purposes.

7. If the qualifying system is grid-tied, the system must meet Arizona Corporation Commission Interconnection Requirements for Self-Generation Equipment. For these requirements, see ACC Decision Number 69674 located at http://images.edocket.azcc.gov/docketpdf/0000074361.pdf
8. Existing systems that are replacing major components may be submitted and reviewed by the utility for the retrofit category of the program's incentive.

Attachment B
Solar Space Heating UFI Incentive Calculation Procedure

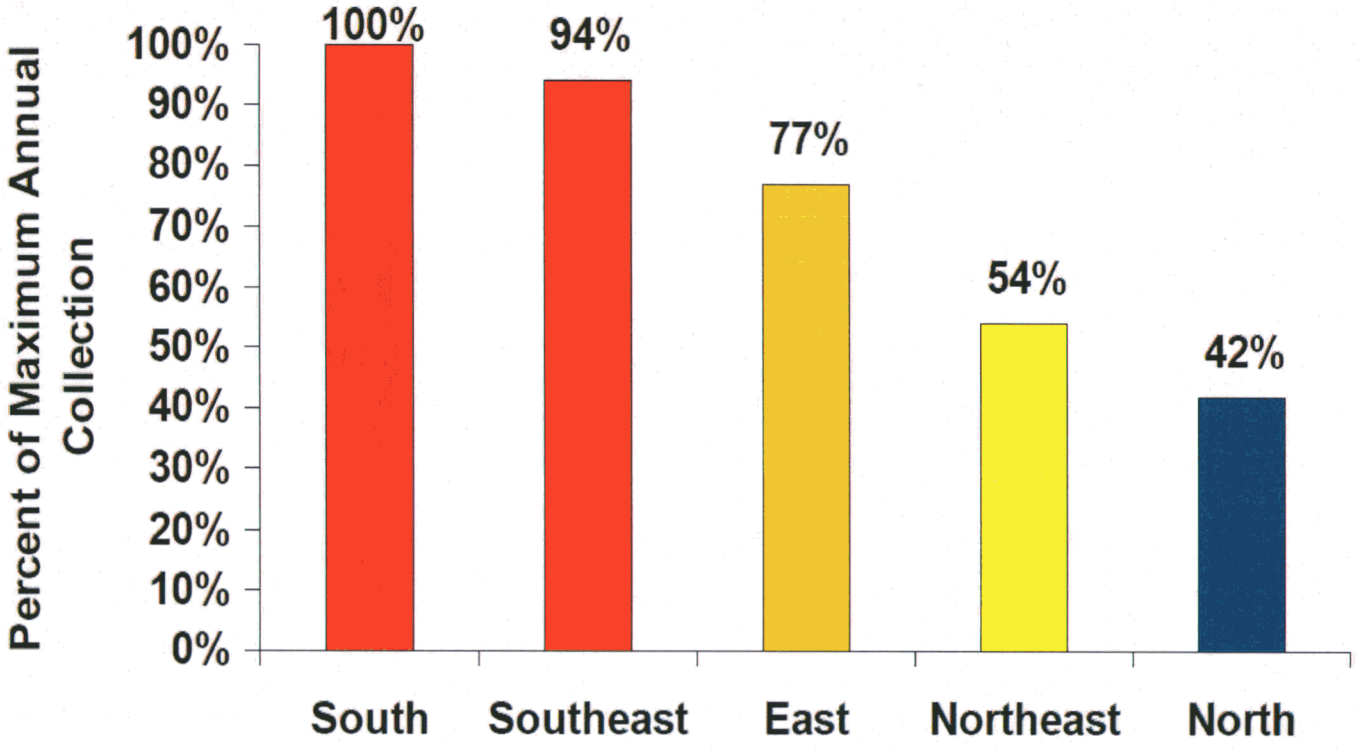
UNSE requires specific design documents for solar water/space heating installations. UNSE will review the design, compare to similarly situated installations, require data logging/monitoring to be used, and may consult industry experts in determining the actual kWh saved by such systems. UNSE reserves the right to change review procedures as technologies advance and/or review protocol is improved.

Attachment C
Solar Hot Water Off-Angle and Shading Annual Energy Derating Chart



If the SHW system falls outside of the 95-100% performance band, then the UFI for the system will be derated. The incentive will be derated based on the decrease in annual energy output anticipated by this chart.

Attachment D
Solar Hot Water System Azimuth Angle Derating Chart



Non-Residential Solar Water Heating and Space Heating: Systems with Annual Production Output Greater Than 400,000 kWh Equivalent

Incentive Levels for Large Non-Residential Solar Water Heating and Space Heating Systems

Solar water heating and space heating in large non-residential applications are eligible for performance-based incentives (PBIs). In the case of solar water heating and space heating, the PBI allows the customer to collect incentive payments in relation to the actual system production. Table 4 identifies the maximum incentives available for large non-residential solar water heating and space heating systems.

In all cases, incentive values listed in Table 4 are maximum values. PBIs are awarded through a bid process, which is discussed later in this section. Applicants are encouraged to submit bids requesting incentive amounts less than the maximums listed. Bids requesting a lower level of incentive payment than the maximum will have an increased chance of acceptance in the allocation ranking process.

Table 4. Maximum Incentives for Large Non-Residential Solar Water Heating and Space Heating

Maximum Incentive Level for REC Agreement of the Specified Duration**

Year	10-year REC Agreement	15-year REC Agreement	20-year REC Agreement
2011	$0.057/kWh	$0.052/kWh	$0.051/kWh

Notes:
**Incentive level is based upon $/kWh equivalent output

- There is no incentive cap for non-residential systems other than annual program funding considerations.
- A PBI cannot exceed 60% of the real project costs, defined as the undiscounted total system cost plus acceptable financing charges. Acceptable finance charges are finance charges used for the PBI incentive cap calculation and cannot exceed the current prime interest rate plus 5%. Financing charges must be disclosed as part of the commissioning package, if not disclosed before.
- The customer must pay at least 15% of the project cost, after other government incentives (e.g., tax credits) are considered. (See explanation of incentive calculation below.)
- Systems may not be eligible to receive RECPP incentives if other utility incentives are applied.
- UNSE will require and perform specific design analysis and review on project design estimates.
- The bid evaluator reserves the right to award incentives to solar thermal projects other than those that meet the specifications outlined in Attachment A. Incentives in these cases will be determined by the bid evaluator.

The incentive amount will be calculated at the time the application is approved for reservation. If federal or state incentives change during the period of time after the reservation approval, the incentive amount reserved will not be changed as long as the reservation is not cancelled.

UNSE's payment of a PBI will assure UNSE complete and irrevocable ownership of the REC for the full duration of the PBI agreement. The agreement duration must fully coincide with the PBI payment schedule and

the system must be supported by system warranty or planned maintenance schedules for the term of the agreement.

PROJECT FUNDING

Non-residential funds will be committed as bids are accepted; funds may be placed in reserve for later in the year. As a result, the budget may be committed before the end of the year. Funds will be made available to projects based on a ranking generated by lowest expected life cycle credit purchase cost as provided in the application and verified by UNSE. Projects submitted to the utility for reservation will be ranked based on a calculated index value for purposes of allocating non-residential funds as proposed in the application and verified by UNSE. Lowest lifecycle cost projects will be funded first. Indexing of the non-residential projects will be performed based on the verified incentive values and duration of the proposed agreement in the application for that project. In addition, the bid evaluator assesses the likelihood that the project will be completed. Projects with higher incentive payments result in a higher expected life cycle credit purchase cost and projects that produce more kWh result in a lower expected life cycle credit purchase cost. In the event of a tie in the ranking, when the program would be fully subscribed if both projects were given reservation status, funds will be awarded based on the date of receipt of the completed reservation request.

Reservation requests will reviewed by the utility on a monthly basis. Once reservation requests are fully ranked each month, notification of reservation approvals and rejections will be made in conformance with the rankings and available funding.

Funds unused in one period will be equally divided among the remaining periods in that year. Funds allocated to non-residential projects will not roll forward from one year to the next. Reservations which are rejected as a result of insufficient program funds may elect to carry forward into the next period and retain the original reservation date. The election must be made at the time of the original application.

THE FINE PRINT

In addition to the other requirements described in this hand book, there are two other types of program details of which system owners and installers should be aware:

1. Installer qualifications
2. System removal

These are described in further detail below.

Installer Qualifications

All systems receiving incentives under the RECPP must be installed by a qualified installer. The following requirements must be submitted by the applicant as part of the reservation request. UNSE will verify that the installer meets the following minimum qualifications prior to confirming a reservation request:

1. 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. Alternatively, the installer must identify use of a contractor holding an appropriate license on file with the AZROC for the

technology being installed. A copy of the AZROC license must be provided as part of the reservation request.

2. The installer must possess an Arizona business license that is active and in good standing.

Installers may request that the above information be retained on file with UNSE; however, under this option the installer must certify that the information on file remains current with the submission of each reservation request. Information on file must be renewed yearly.

System Removal

If receiving a PBI, the Qualifying System or any components thereof shall not be removed from the premises ~~until the last day of the final month of the final full calendar year of the applicable incentive payment term in~~ the Agreement following completion of system installation of the renewable energy system, without express agreement from UNSE. If the Qualifying System is removed in violation of this provision, customer shall immediately reimburse UNSE all incentive amounts paid by UNSE to customer or on behalf of customer to an authorized third party.

In addition, if a Qualified System is removed, UNSE shall monitor that specific customer site to ensure that an additional incentive is not provided for any new distributed renewable energy resource system on that site until the REC contracted operational life of the original system has been completed.

UNSE shall attempt to monitor the number of missing or non-working distributed generation systems and shall summarize its observations in its annual Compliance Report.

Attachment A
Qualifications for Large Non-Residential Solar Water Heating and Space Heating

The following equipment qualifications listed are mandatory requirements which must be met at the time of project commissioning to receive a RECPP incentive. The installation guidance is intended to provide consumers with information on installation and operation practices which are most likely to support achieving the system's designed output. Installation guidance is mandated in order for a project to receive a RECPP incentive, as it does reflect both industry and UNSE concurrence on those practices which are important for a technology to best achieve the designed output. In the future, additional installation guidance items may be considered for inclusion as part of the equipment qualifications.

~~UNSE acknowledges that many regulations and site-specific requirements may apply to the installation of~~ renewable energy technologies. UNSE agrees that no requirement imposed by these technology criteria shall be imposed in conflict with any other governmental requirements. Any RECPP-based requirement which is in conflict with a site-specific governmental requirement shall be detailed in the reservation request. All qualifying systems must adhere to the following requirements in addition to the RECPP program requirements:

Equipment Qualifications

1. Solar collector panels used will have a SRCC OG-100 certification or publicly-funded laboratory documentation showing the panel energy output under controlled and replicable test conditions.
2. If annual energy production is expected to exceed 10,000 kWh or equivalent, the system must include a dedicated performance customer-supplied meter to allow for monitoring of the amount of useful heat produced. Otherwise, compliance reporting production will be based on the design energy savings submitted at time of application.
3. 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 by submitting an engineering report stamped by a registered professional engineer. The engineering report shall provide a description of the system and major components, design criteria and performance expectations, applicable standards and/or codes, and a brief history of components in similar applications.
4. The solar collector, heat exchangers and storage elements shall have an equipment warranty of at least five years to qualify for a PBI.
5. The system will in all cases have a material and full labor warranty of at least five years.

Installation Guidance

1. The horizontal tilt angle of the collector panels should be between 20 and 60 degrees (30 and 60 degrees for space heating applications) and an azimuth angle +/- 45 degrees of south. Azimuth or tilt angles outside these parameters may be reviewed and approved by the utility, at their discretion
2. All systems should be installed such that the energy collection system is substantially unshaded and should have substantially unobstructed exposure to direct sunlight between the hours of 9:00 a.m. and 3:00 p.m. Solar Hot Water de-rating chart (see Attachment C and D in this section) may be used to adjust incentive level based upon affected output due to shading.
3. The system installation should comply with the design manual.
4. Heat exchange fluid in glycol systems should be tested, flushed and refilled with new fluid as necessary or at a minimum every five years or sooner per manufacturer's recommendations.

5. It is recommended that the anode rod be checked and replaced per manufacturer's recommendations, but no less frequently than every five years.
6. It is recommended that the system design include a timer, switch, and a temperature sensor on the backup element of the storage tank.
7. It is recommended that in areas where water quality problems are reported to have reduced the expected life of a solar water heater, that a water quality test is performed for each residence to screen for materials that through interaction with the materials of the proposed solar water heating system may reduce the expected operational life of the system components. The customer should consider contacting the manufacturer to determine if warranty or operational life will be affected.
8. In areas subject to snow accumulation, sufficient clearance will be provided to allow a 12" snowfall to be shed from a solar collector without shadowing any part of the collector.
9. Each system shall have a comprehensive operation and maintenance manual at the customer's site, which includes a spare parts list, data sheets and flow diagrams indicating operating temperatures and pressures, maintenance schedules and description of testing methods and each customer must complete an initial start up and operation training review with the contractor at the time of system start up
10. UNSE reserves the right to modify standards as technology changes on a case by case basis, pending independent laboratory analysis, Professional Engineer ("PE") stamp, or UNSE engineering analysis

General Requirements

1. The project must comply with applicable local, state, and federal regulations.
2. Products must be installed according to manufacturers' recommendations.
3. Installations must meet applicable governmental statutes, codes, ordinances, and accepted engineering and installation practices.
4. Systems must be permitted and inspected by the jurisdiction having authority over construction projects in the customer's locale.
5. All major system components must be new and must not have been previously placed in service in any other location or for any other application.
6. All renewable electricity generation systems must include a dedicated performance meter (provided by UNSE) which allows for measurement of system energy production. Certain other non-electric renewable energy production systems, noted below, will require customer supplied metering for PBI payment calculation purposes.
7. If the qualifying system is grid-tied, the system must meet Arizona Corporation Commission Interconnection Requirements for Self-Generation Equipment.

Ground Source Heat Pumps:
Residential and Non-Residential Applications

Incentive Levels for Residential and Non-Residential Ground Source Heat Pump Systems

Residential and small non-residential ground source heat pump systems are eligible for up-front incentives ("UFIs"). UFIs are those incentives where the customer receives a one-time payment based on the system's designed capacity. Table 5 identifies the incentives available for GSHP systems.

Table 5. Up-Front Incentives for Residential and Non-Residential Ground Source Heat Pump Systems

Year	Incentive Level
2011	$500/ton

Notes:
*Indicates that the incentive for that year has not yet been approved by the Arizona Corporation Commission (ACC). As such, these incentives are tentative and may change pending ACC approval.

- Customers will receive a UFI up to a cap of 200 tons.
- The UFI may not exceed 30% of total system cost.
- The UFI may not exceed 60% of total System Cost.
- The customer must pay at least 15% of the project cost, after other government incentives (e.g., tax credits) are considered. (See explanation of incentive calculation below.)
- Systems may not be eligible to receive RECPP incentives if other utility incentives are applied.

The incentive amount will be calculated at the time the application is approved for reservation. If federal or state incentives change during the period of time after the reservation approval, the incentive amount reserved will not be changed as long as the reservation is not cancelled.

In return for UNSE's payment of a UFI, UNSE will be given complete and irrevocable ownership of the RECs until December 31st of the 20th full calendar year after completion of installation of the system. Operational life during that time frame must be supported by system warranty or planned maintenance schedules.

Project Funding

Funds will be made available for reservations on a first-come, first-reserved basis, until annual funding is reserved. Reservations which are rejected as a result of insufficient funds will be placed on a waiting list and offered the opportunity to retain their original reservation date for one additional quarter without the need to resubmit application documentation. If the incentive level has changed from the date of the original reservation to the date when the reservation is approved, the new incentive level shall be applied.

Project Requirements after Installation

After completing the installation of a small distributed energy system, the customer must continue to provide information to UNSE about the system's performance.

All customers receiving renewable energy self-generation incentives are obligated to report system production to UNSE in accordance with the reporting schedule established in the program agreement between UNSE and the customer. UNSE, at its option, may perform periodic inspection of the system for operation, metered production, and reporting purposes.

THE FINE PRINT

In addition to the other requirements described in this hand book, there are two other types of program details of which system owners and installers should be aware:

1. Installer qualifications
2. System removal

These are described in further detail below.

Installer Qualifications

All systems receiving incentives under the RECPP must be installed by a qualified installer. The following requirements must be submitted by the applicant as part of the reservation request. UNSE will verify that the installer meets the following minimum qualifications prior to confirming a reservation request:

1. 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. Alternatively, the installer must identify use of a contractor holding an appropriate license on file with the AZROC for the technology being installed. A copy of the AZROC license must be provided as part of the reservation request.
2. The installer must possess an Arizona business license that is active and in good standing.

Installers may request that the above information be retained on file with UNSE; however, under this option the installer must certify that the information on file remains current with the submission of each reservation request. Information on file must be renewed yearly.

System Removal

If receiving a UFI, neither the Qualifying System nor any components thereof shall be removed from the premises (by either the applicant or future owners or occupants of the property) until December 31st of the 20th full calendar year following completion of system installation of the renewable energy system, without express agreement of UNSE. If the Qualifying System is removed by any party in violation of this provision, customer shall immediately reimburse UNSE all incentive amounts paid by UNSE to customer or on behalf of customer to an authorized third party.

In addition, if a Qualified System is removed, UNSE shall monitor that specific customer site to ensure that an additional incentive is not provided for any new distributed renewable energy resource system on that site until the REC contracted operational life of the original system has been completed.

UNSE shall attempt to monitor the number of missing or non-working distributed generation systems and shall summarize its observations in its annual Compliance Report.

ATTACHMENT A
QUALIFICATIONS FOR RESIDENTIAL AND NON-RESIDENTIAL GROUND SOURCE HEAT PUMP SYSTEMS

The following equipment qualifications listed are mandatory requirements which must be met at the time of project commissioning to receive a RECPP incentive. The installation guidance is intended to provide consumers with information on installation and operation practices which are most likely to support achieving the system's designed output. Installation guidance is mandated in order for a project to receive a RECPP incentive, as it does reflect both industry and UNSE concurrence on those practices which are important for a technology to best achieve the designed output. In the future, additional installation guidance items may be considered for inclusion as part of the equipment qualifications.

UNSE acknowledges that many regulations and site-specific requirements may apply to the installation of renewable energy technologies. UNSE agrees that no requirement imposed by these technology criteria shall be imposed in conflict with any other governmental requirements. Any RECPP-based requirement which is in conflict with a site-specific governmental requirement shall be detailed in the reservation request. All qualifying systems must adhere to the following requirements in addition to the RECPP program requirements:

Equipment Qualifications

1. Geothermal system installations involving a regulated boiler or pressure vessel are required to comply with all Arizona state boiler regulations; provide a qualifying boiler inspection identification number; and keep all applicable permits in good standing.
2. 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 by submitting an engineering report stamped by a registered third-party professional engineer. The engineering report shall provide a description of the system and major components, design criteria and performance expectations, applicable standards and/or codes, and a brief history of components in similar applications.
3. Energy production for space heating, space cooling and process heating will be calculated as one kWh of energy per 3,415 BTU of useful heat delivered by the system as measured by a dedicated heat delivery measuring meter and used by the building space or process.
4. The system will have a material and labor warranty of at least five years.
5. The system must meet Arizona DEQ environmental standards.
6. The most current Energy Star Standards must be achieved. These can be found at http://www.energystar.gov/index.cfm?c=geoheat.prcritgeoheatpumps.

Installation Guidance

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

General Requirements

1. The project must comply with applicable local, state, and federal regulations.
2. Products must be installed according to manufacturers' recommendations.
3. Installations must meet applicable governmental statutes, codes, ordinances, and accepted engineering and installation practices.

4. Systems must be permitted and inspected by the jurisdiction having authority over construction projects in the customer's locale.
5. All major system components must be new and must not have been previously placed in service in any other location or for any other application.
6. All renewable electricity generation systems must include a dedicated performance meter (provided by UNSE) which allows for measurement of system energy production. Certain other non-electric renewable energy production systems, noted below, will require customer supplied metering for PBI payment calculation purposes.
7. If the qualifying system is grid-tied, the system must meet Arizona Corporation Commission Interconnection Requirements for Self-Generation Equipment.

Wind Systems Smaller Than 1 MW

UNS Electric, Inc. ("UNSE" or the "Company") is committed to assisting our customers in developing their own renewable generation resources, through a balanced and supportive renewable energy distributed generation incentive program. Our goal is to create a program that will provide incentives for affordable, environmentally sensitive, customer-sited renewable energy generation systems to supplement UNSE customer's energy needs. A properly designed system, matched to a customer's energy use, will provide a reduction in utility bills through the use of renewable resources. This program reflects our commitment to reduce the cost of developing renewable energy resources.

INCENTIVE LEVELS FOR SMALL WIND SYSTEMS

Wind systems smaller than 1 MW are eligible for up-front incentives ("UFIs"). UFIs are those incentives where the customer receives a one-time payment based on the system's designed capacity. Table 6 identifies the incentives available for wind systems smaller than 1 MW.

Table 6. Up-Front Incentives for Small Wind Systems

YEAR	ON-GRID INCENTIVE LEVEL	OFF-GRID INCENTIVE LEVEL
2011	$2.25/W AC	$1.80/W AC

Notes:
*Indicates that the incentive for that year has not yet been approved by the Arizona Corporation Commission ("ACC" or the "Commission"). As such, these incentives are tentative and may change pending ACC approval.

- UNSE customers will receive a UFI up to a cap of 1 MW. If a system is installed larger than 1 MW, it must apply under the utility-scale program.
- The UFI may not exceed 60% of total System Cost.
- The customer must pay at least 15% of the project cost, after other government incentives (e.g., tax credits) are considered. (See explanation of incentive calculation below.)
- Systems may not be eligible to receive RECPP incentives if other utility incentives are applied.

The incentive amount will be calculated at the time the application is approved for reservation. If federal or state incentives change during the period of time after the reservation approval, the incentive amount reserved will not be changed as long as the reservation is not cancelled.

In return for UNSE's payment of a UFI, UNSE will be given complete and irrevocable ownership of the RECs until December 31st of the 20th full calendar year after completion of installation of the system. Operational life during that time frame must be supported by system warranty or planned maintenance schedules.

PROJECT FUNDING

Funds will be made available for reservations on a first-come, first-reserved basis, until annual funding is reserved. Reservations which are rejected as a result of insufficient funds will be placed on a waiting list and offered the opportunity to retain their original reservation date for one additional quarter without the need to

resubmit application documentation. If the incentive level has changed from the date of the original reservation to the date when the reservation is approved, the new incentive level shall be applied.

NET METERING

All projects must comply with ACC net metering rules.

PROJECT REQUIREMENTS AFTER INSTALLATION

After completing the installation of a small wind project, the customer must continue to provide information to UNSE about the system's performance.

All customer systems receiving renewable energy self-generation incentives are obligated to include a UNSE-supplied production meter, which will report system production to UNSE in accordance with the regular meter-reading schedule. UNSE, at its option, may perform periodic inspection of the system for operation, metered production, and reporting purposes.

THE FINE PRINT

In addition to the other requirements described in this hand book, there are two other types of program details of which system owners and installers should be aware:

1. Installer qualifications
2. System removal

These are described in further detail below.

Installer Qualifications

All systems receiving incentives under the RECPP must be installed by a qualified installer. The following requirements must be submitted by the applicant as part of the reservation request. UNSE will verify that the installer meets the following minimum qualifications prior to confirming a reservation request:

1. 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. Alternatively, the installer must identify use of a contractor holding an appropriate license on file with the AZROC for the technology being installed. A copy of the AZROC license must be provided as part of the reservation request.
2. The installer must possess an Arizona business license that is active and in good standing.

Installers may request that the above information be retained on file with UNSE; however, under this option the installer must certify that the information on file remains current with the submission of each reservation request. Information on file must be renewed yearly.

System Removal

If receiving a UFI, neither the Qualifying System nor any components thereof shall be removed from the premises (by either the applicant or future owners or occupants of the property) until December 31st of the 20th full calendar year following completion of system installation of the renewable energy system, without express agreement of UNSE. If the Qualifying System is removed by any party in violation of this provision, customer shall immediately reimburse UNSE all incentive amounts paid by UNSE to customer or on behalf of customer to an authorized third party.

In addition, if a Qualified System is removed, UNSE shall monitor that specific customer site to ensure that an additional incentive is not provided for any new distributed renewable energy resource system on that site until the REC contracted operational life of the original system has been completed.

UNSE shall attempt to monitor the number of missing or non-working distributed generation systems and shall summarize its observations in its annual Compliance Report.

Attachment A
Qualifications for Wind Systems Smaller Than 1 MW

A small wind generator is a system with a nameplate capacity rating of One MW or less. The technology criteria described below are intended for small wind generators with a nameplate rating of 50 kW or less. Larger systems will be required to submit a detailed package describing site selection, energy production modeling, and an engineered system design and installation report.

The following equipment qualifications listed are mandatory requirements which must be met at the time of project commissioning to receive a RECPP incentive. The installation guidance is intended to provide consumers with information on installation and operation practices which are most likely to support achieving the system's designed output. Installation guidance is mandated in order for a project to receive a RECPP incentive, as it does reflect both industry and UNSE concurrence on those practices which are important for a technology to best achieve the designed output. In the future, additional installation guidance items may be considered for inclusion as part of the equipment qualifications.

UNSE acknowledges that many regulations and site-specific requirements may apply to the installation of renewable energy technologies. UNSE agrees that no requirement imposed by these technology criteria shall be imposed in conflict with any other governmental requirements. Any RECPP-based requirement which is in conflict with a site-specific governmental requirement shall be detailed in the reservation request. All qualifying systems must adhere to the following requirements in addition to the RECPP program requirements:

Equipment Qualifications

1. Eligible small wind systems must be certified and nameplate rated by the Consumer Energy Center ("CEC")[6]. See www.consumerenergycenter.org/erprebate/equipment.html for a list of certified generators. For grid tied or off-grid wind generators where an inverter is used, the CEC listed nameplate rating of the wind generator will be multiplied by the CEC approved weighted efficiency percentage listed for the inverter in the "List of Eligible Inverters" at www.consumerenegycenter.org/cgi-bin/eligible_inverters.cgi to calculate the wind turbine nameplate rating for use in determining the UFI payment.[7]
2. Grid connected inverters used as part of the system shall carry a UL listing certifying full compliance with Underwriter's Laboratory ("UL")-1741.
3. A system must include a dedicated performance meter (provided by UNSE) installed to allow for measurement of the amount of electricity produced.
4. The performance meter and utility disconnect for grid tied systems will be installed in a location readily accessible by UNSE during normal business hours.
5. Off-grid systems of capacity less than 10 kW AC will not be metered. Compliance reporting production will be based on an annual 20% capacity factor.
6. The tower used in the installation must be designed by an Arizona registered engineer and must be suitable for use with the wind generator. Tower installation must be designed and supervised by individuals familiar with local geotechnical conditions.

[6] UNSE recommends review of the SWCC standards for rating small wind generators once they become available for purposes of supplanting the CEC requirement in this Technology Criterion.

[7] Inverter outputs are rated in dc Watts and must be converted to ac Watts for incentive calculation purposes.

7. To receive a UFI, the wind generator and system must be covered by a manufacturer's warranty of at least 5 years. Otherwise the system will qualify for a PBI. In all cases, the wind system will have a material and labor warranty of at least five years.

Installation Guidance

1. 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.
2. Lot Size: should be one-half acre at minimum. Municipalities and public facilities such as schools and libraries are exempt from the minimum lot size requirements.

General Requirements

1. The project must comply with applicable local, state, and federal regulations.
2. Products must be installed according to manufacturers' recommendations.
3. Installations must meet applicable governmental statutes, codes, ordinances, and accepted engineering and installation practices.
4. Systems must be permitted and inspected by the jurisdiction having authority over construction projects in the customer's locale.
5. All major system components must be new and must not have been previously placed in service in any other location or for any other application.
6. All renewable electricity generation systems must include a dedicated performance meter (provided by UNSE) which allows for measurement of system energy production. Certain other non-electric renewable energy production systems, noted below, will require customer supplied metering for PBI payment calculation purposes.
7. Wind system components shall be properly labeled, including AC & DC disconnects (if present), wind generation meter, service panel (outside cover), and breakers inside the service panel.
8. If the qualifying system is grid-tied, the system must meet Arizona Corporation Commission Interconnection Requirements for Self-Generation Equipment.
   See http://images.edocket.azcc.gov/docketpdf/0000074361.pdf for these requirements.

Non-Residential Solar Daylighting

INCENTIVE LEVELS FOR NON-RESIDENTIAL SOLAR DAYLIGHTING SYSTEMS

Non-residential solar daylighting systems are eligible for up-front incentives ("UFIs"). The UFI allows the customer to collect incentive payments in direct relation to the actual system production. Table **7** identifies the incentives available for non-residential daylighting systems.

Table 7. Up-Front Incentives for Non-Residential Daylighting Systems

Year	Incentive Level
2011	$0.18/kWh savings during first five years

Notes:

- The per-kWh incentive applies only to estimated energy savings during the first five years of project operation.
- The UFI may not exceed 60% of total System Cost.
- The customer must pay at least 15% of the project cost, after other government incentives (e.g., tax credits) are considered. (See explanation of incentive calculation below.)
- Systems may not be eligible to receive RECPP incentives if other utility incentives are applied.
- As described later in this document, these incentive levels may be decreased because of sub-optimal system positioning.

The incentive amount will be calculated at the time the application is approved for reservation. If federal or state incentives change during the period of time after the reservation approval, the incentive amount reserved will not be changed as long as the reservation is not cancelled.

In return for UNSE's payment of a UFI, UNSE will be given complete and irrevocable ownership of the RECs until December 31st of the 20th full calendar year after completion of installation of the system. Operational life during that time frame must be supported by system warranty or planned maintenance schedules.

PROJECT FUNDING

Funds will be made available for reservations on a first-come, first-reserved basis, until annual funding is reserved. Reservations which are rejected as a result of insufficient funds will be placed on a waiting list and offered the opportunity to retain their original reservation date for one additional quarter without the need to resubmit application documentation. If the incentive level has changed from the date of the original reservation to the date when the reservation is approved, the new incentive level shall be applied.

Funds unused in one period will be equally divided among the remaining periods in that year. Funds allocated to non-residential projects will not roll forward from one year to the next. Reservations which are rejected as a result of insufficient program funds may elect to carry forward into the next period and retain the original reservation date. The election must be made at the time of the original application.

THE FINE PRINT

In addition to the other requirements described in this hand book, there are two other types of program details of which system owners and installers should be aware:

1. Installer qualifications
2. System removal

These are described in further detail below.

Installer Qualifications

All systems receiving incentives under the RECPP must be installed by a qualified installer. The following requirements must be submitted by the applicant as part of the reservation request. UNSE will verify that the installer meets the following minimum qualifications prior to confirming a reservation request:

1. 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. Alternatively, the installer must identify use of a contractor holding an appropriate license on file with the AZROC for the technology being installed. A copy of the AZROC license must be provided as part of the reservation request.
2. The installer must possess an Arizona business license that is active and in good standing.

Installers may request that the above information be retained on file with UNSE; however, under this option the installer must certify that the information on file remains current with the submission of each reservation request. Information on file must be renewed yearly.

System Removal

If receiving a PBI, the Qualifying System or any components thereof shall not be removed from the premises until the last day of the final month of the final full calendar year of the applicable incentive payment term in the Agreement following completion of system installation of the renewable energy system, without express agreement from UNSE. If the Qualifying System is removed in violation of this provision, customer shall immediately reimburse UNSE all incentive amounts paid by UNSE to customer or on behalf of customer to an authorized third party.

In addition, if a Qualified System is removed, UNSE shall monitor that specific customer site to ensure that an additional incentive is not provided for any new distributed renewable energy resource system on that site until the REC contracted operational life of the original system has been completed.

UNSE shall attempt to monitor the number of missing or non-working distributed generation systems and shall summarize its observations in its annual Compliance Report.

Attachment A
Qualifications for Non-Residential Solar Daylighting

The following equipment qualifications listed are mandatory requirements which must be met at the time of project commissioning to receive a RECPP incentive. The installation guidance is intended to provide consumers with information on installation and operation practices which are most likely to support achieving the system's designed output. Installation guidance is mandated in order for a project to receive a RECPP incentive, as it does reflect both industry and UNSE concurrence on those practices which are important for a technology to best achieve the designed output. In the future, additional installation guidance items may be considered for inclusion as part of the equipment qualifications.

UNSE acknowledges that many regulations and site-specific requirements may apply to the installation of renewable energy technologies. UNSE agrees that no requirement imposed by these technology criteria shall be imposed in conflict with any other governmental requirements. Any RECPP-based requirement, which is in conflict with a site-specific governmental requirement, shall be detailed in the reservation request. All qualifying systems must adhere to the following requirements in addition to the RECPP program requirements:

Equipment Qualifications

All systems shall include the following components as part of the day lighting system:

1. Skylights must adhere to the 2009 International Energy Conservation Code with regard to the U-factor and solar heat gain coefficient and must have a minimum visible transmittance based on the CPUC Savings by Design program (Note: U-value and SHGC ratings should be based on a 20 degree ratings, now standard through the NFRC):
    - Maximum U-factor of 0.75
    - Maximum solar heat gain coefficient of 0.35
    - Minimum visible transmittance of 0.45
2. Skylight can be in a toplighting configuration only.
3. Skylight area may not exceed 3% of the gross roof area.
4. Skylights must be certified by the National Fenestration Rating Council (NFRC).
5. If artificial lighting systems remain a part of the installation, the system shall include automated lighting control(s) which are programmed to keep electric lights off/dimmed during daylight hours of sufficient solar insulation to provide minimum design illumination levels.
6. The system will have a material and labor warranty of at least five years.

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 9:00 a.m. and 3:00 p.m.

General Qualifications

1. The project must comply with applicable local, state, and federal regulations.
2. Products must be installed according to manufacturers' recommendations.
3. Installations must meet applicable governmental statutes, codes, ordinances, and accepted engineering and installation practices.
4. Systems must be permitted and inspected by the jurisdiction having authority over construction projects in the customer's locale.

5. All major system components must be new and must not have been previously placed in service in any other location or for any other application.
6. All renewable electricity generation systems must include a dedicated performance meter (provided by UNSE) which allows for measurement of system energy production. Certain other non-electric renewable energy production systems, noted below, will require customer supplied metering for PBI payment calculation purposes.
7. If the qualifying system is grid-tied, the system must meet Arizona Corporation Commission Interconnection Requirements for Self-Generation Equipment. See http://images.edocket.azcc.gov/docketpdf/0000074361.pdf for these requirements.

Additional Technologies with Prescriptive Incentives

(1) Biomass/Biogas or Geothermal Space Heating, Process Heating, or Space Cooling: Non-Residential
(2) Biomass/Biogas, Hydro or Geothermal Electric
(3) Solar Space Cooling

INCENTIVE LEVELS FOR ADDITIONAL TECHNOLOGIES

The additional distributed energy technologies in residential and small non-residential applications are eligible for performance-based incentives ("PBIs"). The PBI allows the customer to collect incentive payments in direct relation to the actual system production. These incentive levels are specific to each of the groups of technologies. Table 8 summarizes the incentive levels for these technologies for REC agreements signed in 2011;

In all cases, incentive values listed in Table 8. PBIs are awarded through a bid process, which is discussed later in this section. Applicants are encouraged to submit bids requesting incentive amounts less than the maximums listed. Bids requesting a lower level of incentive payment than the maximum will have an increased chance of acceptance in the allocation ranking process.

Table 8. Maximum Incentives for Additional Technologies for 2011

TECHNOLOGY/APPLICATION	10-YEAR REC AGREEMENT SIGNED IN 2011 ($/KWH)	15-YEAR REC AGREEMENT SIGNED IN 2011 ($/KWH)	20-YEAR REC AGREEMENT SIGNED IN 2011 ($/KWH)
Biomass/Biogas (Electric)	$0.060	$0.056	$0.054
Biomass/Biogas – CHP (Electric) [3]	$0.035	$0.032	$0.031
Biomass/Biogas – CHP (Thermal) [3]	$0.018	$0.017	$0.016
Biomass/Biogas (thermal)	$0.015	$0.014	$0.013
Biomass/Biogas (cooling)	$0.032	$0.030	$0.029
Geothermal – (electric)	$0.024	$0.022	$0.022
Geothermal – (thermal)	$0.048	$0.045	$0.043
Small Hydro	$0.060	$0.056	$0.054
Solar Space Cooling	$0.129	$0.120	$0.115

Notes:
*1st year savings.

- There is no incentive cap for non-residential systems other than annual program funding considerations.
- A PBI cannot exceed 60% of the real project costs, defined as the undiscounted total system cost plus acceptable financing charges. Acceptable finance charges are finance charges used for the PBI incentive cap calculation and cannot exceed the current prime interest rate plus 5%. Financing charges must be disclosed as part of the commissioning package, if not disclosed before.
- The customer must pay at least 15% of the project cost, after other government incentives (e.g., tax credits) are considered. (See explanation of incentive calculation below.)
- The CHP incentives may be used in combination for the appropriate components of one system.
- The solar space heating and cooling incentives may be used in combination for the appropriate components of the system.

- Systems may not be eligible to receive RECPP incentives if other utility incentives are applied.

System Cost for a solar space heating system will not include the cost of any passive thermal storage or the cost of the building heating system itself. It will include the cost of new materials and installation of active thermal storage, expansion tanks, controls, tempering valves, piping, vents, drains, safety valves and all freeze protection.

The incentive amount will be calculated at the time the application is approved for reservation. If federal or state incentives change during the period of time after the reservation approval, the incentive amount reserved will not be changed as long as the reservation is not cancelled.

UNSE's payment of a PBI will assure UNSE complete and irrevocable ownership of the REC for the full duration of the PBI agreement. The agreement duration must fully coincide with the PBI payment schedule and the system must be supported by system warranty or planned maintenance schedules for the term of the agreement.

PROJECT FUNDING

Non-residential funds will be committed as bids are accepted; funds may be placed in reserve for later in the year. As a result, the budget may be committed before the end of the year. Funds will be made available to projects based on a ranking generated by lowest expected life cycle credit purchase cost as provided in the application and verified by UNSE, as well as likelihood of construction. Projects submitted to the utility for reservation will be ranked based on a calculated index value for purposes of allocating non-residential funds as proposed in the application and verified by UNSE. Lowest lifecycle cost projects will be funded first. Indexing of the non-residential projects will be performed based on the verified incentive values and duration of the proposed agreement in the application for that project. In addition, the bid evaluator assesses the likelihood that the project will be completed. Projects with higher incentive payments result in a higher expected life cycle credit purchase cost and projects that produce more kWh result in a lower expected life cycle credit purchase cost. In the event of a tie in the ranking, when the program would be fully subscribed if both projects were given reservation status, funds will be awarded based on the date of receipt of the completed reservation request.

Reservation requests will reviewed by the utility on a monthly basis. Once reservation requests are fully ranked each month, notification of reservation approvals and rejections will be made in conformance with the rankings and available funding.

Funds unused in one period will be equally divided among the remaining periods in that year. Funds allocated to non-residential projects will not roll forward from one year to the next. Reservations which are rejected as a result of insufficient program funds may elect to carry forward into the next period and retain the original reservation date. The election must be made at the time of the original application.

THE FINE PRINT

In addition to the other requirements described in this hand book, there are two other types of program details of which system owners and installers should be aware:

1. Installer qualifications
2. System removal

These are described in further detail below.

Installer Qualifications

All systems receiving incentives under the RECPP must be installed by a qualified installer. The following requirements must be submitted by the applicant as part of the reservation request. UNSE will verify that the installer meets the following minimum qualifications prior to confirming a reservation request:

3. 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. Alternatively, the installer must identify use of a contractor holding an appropriate license on file with the AZROC for the technology being installed. A copy of the AZROC license must be provided as part of the reservation request.
4. The installer must possess an Arizona business license that is active and in good standing.

Installers may request that the above information be retained on file with UNSE; however, under this option the installer must certify that the information on file remains current with the submission of each reservation request. Information on file must be renewed yearly.

System Removal

If receiving a PBI, the Qualifying System or any components thereof shall not be removed from the premises until the last day of the final month of the final full calendar year of the applicable incentive payment term in the Agreement following completion of system installation of the renewable energy system, without express agreement from UNSE. If the Qualifying System is removed in violation of this provision, customer shall immediately reimburse UNSE all incentive amounts paid by UNSE to customer or on behalf of customer to an authorized third party.

In addition, if a Qualified System is removed, UNSE shall monitor that specific customer site to ensure that an additional incentive is not provided for any new distributed renewable energy resource system on that site until the REC contracted operational life of the original system has been completed.

UNSE shall attempt to monitor the number of missing or non-working distributed generation systems and shall summarize its observations in its annual Compliance Report.

Attachment A
Qualifications for Biomass/Biogas or Geothermal Space Heating, Process Heating or Space Cooling: Non-Residential Applications

The following equipment qualifications listed are mandatory requirements which must be met at the time of project commissioning to receive a RECPP incentive. The installation guidance is intended to provide consumers with information on installation and operation practices which are most likely to support achieving the system's designed output. Installation guidance is mandated in order for a project to receive a RECPP incentive, as it does reflect both industry and UNSE concurrence on those practices which are important for a technology to best achieve the designed output. In the future, additional installation guidance items may be considered for inclusion as part of the equipment qualifications.

UNSE acknowledges that many regulations and site-specific requirements may apply to the installation of renewable energy technologies. UNSE agrees that no requirement imposed by these technology criteria shall be imposed in conflict with any other governmental requirements. Any RECPP-based requirement, which is in conflict with a site-specific governmental requirement, shall be detailed in the reservation request. All qualifying systems must adhere to the following requirements in addition to the RECPP program requirements:

Equipment Qualifications

1. Biomass/Biogas or geothermal system installations involving a regulated boiler or pressure vessel are required to comply with all Arizona state boiler regulations; provide a qualifying boiler inspection identification number; and keep all applicable permits in good standing.
2. 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 by submitting an engineering report stamped by a registered professional engineer. The engineering report shall provide a description of the system and major components, design criteria and performance expectations, applicable standards and/or codes, and a brief history of components in similar applications.
3. Energy production for space heating, space cooling and process heating will be calculated as one kWh of energy per 3,415 BTU of useful heat delivered by the system as measured by a dedicated heat delivery measuring meter and used by the building space or process.
4. The system will have a material and labor warranty of at least five years.
5. The system must meet Arizona DEQ environmental standards.

Installation Guidance

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

General Qualifications

1. The project must comply with applicable local, state, and federal regulations.
2. Products must be installed according to manufacturers' recommendations.
3. Installations must meet applicable governmental statutes, codes, ordinances, and accepted engineering and installation practices.

4. Systems must be permitted and inspected by the jurisdiction having authority over construction projects in the customer's locale.
5. All major system components must be new and must not have been previously placed in service in any other location or for any other application.
6. All renewable electricity generation systems must include a dedicated performance meter (provided by UNSE) which allows for measurement of system energy production. Certain other non-electric renewable energy production systems, noted below, will require customer supplied metering for PBI payment calculation purposes.
7. If the qualifying system is grid-tied, the system must meet Arizona Corporation Commission Interconnection Requirements for Self-Generation Equipment.
   See http://images.edocket.azcc.gov/docketpdf/0000074361.pdf for these requirements.

Attachment B
Qualifications for Biomass/Biogas, Hydro, or Geothermal Electric

The following equipment qualifications listed are mandatory requirements which must be met at the time of project commissioning to receive a RECPP incentive. The installation guidance is intended to provide consumers with information on installation and operation practices which are most likely to support achieving the system's designed output. Installation guidance is mandated in order for a project to receive a RECPP incentive, as it does reflect both industry and UNSE concurrence on those practices which are important for a technology to best achieve the designed output. In the future, additional installation guidance items may be considered for inclusion as part of the equipment qualifications.

UNSE acknowledges that many regulations and site-specific requirements may apply to the installation of renewable energy technologies. UNSE agrees that no requirement imposed by these technology criteria shall be imposed in conflict with any other governmental requirements. Any RECPP-based requirement, which is in conflict with a site-specific governmental requirement, shall be detailed in the reservation request. All qualifying systems must adhere to the following requirements in addition to the RECPP program requirements:

Equipment Qualifications

1. Biomass/Biogas, Hydro or Geothermal system installations involving a regulated boiler or pressure vessel are required to comply with all Arizona state boiler regulations; provide a qualifying boiler inspection identification number; and keep all applicable permits in good standing.
2. System must include a dedicated performance meter to allow for monitoring of the amount of electricity produced.
3. Pre-operational/or pre-commissioning energy savings and design 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 by submitting an engineering report stamped by a qualified registered professional engineer. The engineering report shall provide a description of the system and major components, design criteria and performance expectations, applicable standards and/or codes, and a brief history of components in similar applications.
4. The system will have a material and labor warranty of at least five years.
5. The system must meet Arizona DEQ environmental standards.

Installation Guidance

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

General Qualifications

1. The project must comply with applicable local, state, and federal regulations.
2. Products must be installed according to manufacturers' recommendations.
3. Installations must meet applicable governmental statutes, codes, ordinances, and accepted engineering and installation practices.
4. Systems must be permitted and inspected by the jurisdiction having authority over construction projects in the customer's locale.

5. All major system components must be new and must not have been previously placed in service in any other location or for any other application.
6. All renewable electricity generation systems must include a dedicated performance meter (provided by UNSE) which allows for measurement of system energy production. Certain other non-electric renewable energy production systems, noted below, will require customer supplied metering for PBI payment calculation purposes.
7. If the qualifying system is grid-tied, the system must meet Arizona Corporation Commission Interconnection Requirements for Self-Generation Equipment.

   See http://images.edocket.azcc.gov/docketpdf/0000074361.pdf for these requirements.

Attachment C
Qualifications for Solar Space Cooling

The following equipment qualifications listed are mandatory requirements which must be met at the time of project commissioning to receive a RECPP incentive. The installation guidance is intended to provide consumers with information on installation and operation practices which are most likely to support achieving the system's designed output. Installation guidance is mandated in order for a project to receive a RECPP incentive, as it does reflect both industry and UNSE concurrence on those practices which are important for a technology to best achieve the designed output. In the future, additional installation guidance items may be considered for inclusion as part of the equipment qualifications.

UNSE acknowledges that many regulations and site-specific requirements may apply to the installation of renewable energy technologies. UNSE agrees that no requirement imposed by these technology criteria shall be imposed in conflict with any other governmental requirements. Any RECPP-based requirement, which is in conflict with a site-specific governmental requirement, shall be detailed in the reservation request. All qualifying systems must adhere to the following requirements in addition to the RECPP program requirements:

Equipment Qualifications

1. The minimum cooling capacity of the system will be 120,000 BTU (10 tons) per hour.
2. Solar collector panels used will have a Solar Rating and Certification Corporation ("SRCC") OG-100 rating or laboratory documentation showing the panel energy output under controlled and replicable test conditions.
3. 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 by submitting an engineering report stamped by a registered professional engineer. The engineering report shall provide a description of the system and major components, design criteria and performance expectations, applicable standards and/or codes, and a brief history of components in similar applications.
4. System must include a dedicated performance meter to allow for monitoring of the amount of heat input to the thermal cooling device or system. Energy production will be calculated at one kW-hr per 3,415 BTU of metered heat delivered to the thermal cooling device or system.
5. The system will have a material and labor warranty of at least five years.
6. UNSE reserves the right to modify standards as technology changes on a case by case basis, pending independent laboratory analysis, Professional Engineer ("PE") stamp, or UNSE engineering analysis

Installation Guidance

1. The horizontal tilt angle of the collector panels should be between 20 and 60 degrees and an azimuth angle should be between +/- 45 degrees of south.
2. All systems should be installed such that the energy collection system is substantially unshaded and should have substantially unobstructed exposure to direct sunlight between the hours of 9:00 a.m. and 3:00 p.m.
3. The system installation should comply with the design manual.

General Qualifications

1. The project must comply with applicable local, state, and federal regulations.
2. Products must be installed according to manufacturers' recommendations.
3. Installations must meet applicable governmental statutes, codes, ordinances, and accepted engineering and installation practices.
4. Systems must be permitted and inspected by the jurisdiction having authority over construction projects in the customer's locale.
5. All major system components must be new and must not have been previously placed in service in any other location or for any other application.
6. All renewable electricity generation systems must include a dedicated performance meter (provided by UNSE) which allows for measurement of system energy production. Certain other non-electric renewable energy production systems, noted below, will require customer supplied metering for PBI payment calculation purposes.
7. If the qualifying system is grid-tied, the system must meet Arizona Corporation Commission Interconnection Requirements for Self-Generation Equipment.
   See http://images.edocket.azcc.gov/docketpdf/0000074361.pdf for these requirements.

Technologies without Technology Specific Criteria

Technology specific criteria have not yet been developed for the following qualifying technologies:

- Fuel Cells
- Other

For applicants requesting incentives for these technologies or for applicants requesting installation of a technology with specific project technology criteria, but where some criteria cannot be met, the applicant will need to submit design and output documentation.

Applicants installing these systems will, at a minimum, need to provide an energy savings and designed output report for the system. The 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 qualified registered professional engineer. The engineering report and/or testing certification shall provide a description of the system and major components, design criteria and performance expectations, applicable standards and/or codes, and a brief history of components in similar applications. Additional information may be required as part of the RECPP requirements.

Non-Conforming Projects

Non-conforming projects will be identified as the Program evolves. Incentive levels for such projects will be calculated based on UNSE engineering analysis, independent laboratory analysis, and/or professional engineering ("PE") stamps. Non-conforming projects that prove combined economic and renewable energy value will be allowed appropriately calculated incentives within the RECPP.

Appendix 1: Incentive Summary Tables

RECPP – CONFORMING PROJECT INCENTIVE MATRIX

2011 Program Year

Technology/Application	UP FRONT INCENTIVE [1] 20-Year REC Agreement	10-Year REC Agreement [2] 10-Year Payment ($/kWh)	15-Year REC Agreement [2] 15-Year Payment ($/kWh)	20-Year REC Agreement [2] 20-Year Payment ($/kWh)
BIOMASS/BIOGAS (Electric)	NA	0.060	0.056	0.054
BIOMASS/BIOGAS – CHP (Electric) [3]	NA	0.035	0.032	0.031
BIOMASS/BIOGAS – CHP (Thermal) [3]		0.018	0.017	0.016
BIOMASS/BIOGAS (thermal)	NA	0.015	0.014	0.013
BIOMASS/BIOGAS (cooling)	NA	0.032	0.030	0.029
DAYLIGHTING (Non-Residential)	$0.18/kWh [7] See this note for clarification	NA	NA	NA
GEOTHERMAL – (electric)	NA	0.024	0.022	0.022
GEOTHERMAL – (thermal)	NA	0.048	0.045	0.043
GROUND SOURCE HEAT PUMP – (cooling)	$500/ton	NA	NA	NA
SMALL HYDRO	NA	0.060	0.056	0.054
SMALL WIND (grid-tied) [4]	$2.25/Watt AC	NA	NA	NA
SMALL WIND (off-grid) [4]	$1.80/Watt AC	NA	NA	NA
SOLAR ELECTRIC:				
RESIDENTIAL (GRID-TIED)	$2.25/Watt DC [8]	NA	NA	NA
NON-RESIDENTIAL (GRID-TIED) 50 kW AC or less	$2.00/Watt DC [8]	NA	NA	NA
NON-RESIDENTIAL (GRID-TIED) 51 - 500 kW AC[11]	NA	0.142	0.142	0.142
NON-RESIDENTIAL (GRID-TIED) 500 - 1000 kW AC[11]	NA	0.122	0.122	0.122
NON-RESIDENTIAL (GRID-TIED) More than 1MW AC[11]	NA	0.102	0.102	0.102
RESIDENTIAL (OFF-GRID)	$2.00/Watt DC [8]	NA	NA	NA
NON-RESIDENTIAL (OFF-GRID)	$2.00/Watt DC [8]	NA	NA	NA
SOLAR SPACE COOLING [5]	NA	0. 116	0. 108	0. 104
NON-RESIDENTIAL SOLAR WATER HEATING/SPACE HEATING [5,9,10] (35,000 annual kWh output production equivalent or less) NON-RESIDENTIAL SOLAR WATER HEATING/SPACE HEATING [5,9,10] (400,000 annual kWh output production equivalent or less)	$750 plus $0.50/kWh	NA	NA	NA
RESIDENTIAL SOLAR WATER/SPACE HEATING [6,9,10]	$750 plus $0.25/kWh	NA	NA	NA
NON-RESIDENTIAL POOL HEATING [10]	$750 plus $0.50/kWh	NA	NA	NA

Notes:

1) Residential projects are eligible for an up front incentive (UFI)). UFI payments can not exceed 60% of the cost of renewable energy equipment. An additional $0.20 Watt may be available for residential systems that have first had an approved home energy audit.
2) Non-residential systems 50 kW AC or less are UFI only. Non-residential greater than 50 kW AC are PBI only. The total of payments under a production based incentive can not exceed 60% of the project costs for any project.
3) The CHP incentives may be used in combination for the appropriate components of one system.
4) This UFI applies to a maximum system size of 1 MW.
5) The solar space heating and cooling incentives may be used in combination for the appropriate components of one system.
6) This category includes both traditional water heating and those systems combined with residential solar water heating used for space heating. Space heating applications require a report detailing energy saving for the complete system.
7) Rate applies to measured first five years of energy savings only. Payment is made up-front at beginning of 1st year.
8) Some UFI based installations will require an adjustment of the incentive as detailed in the PV Incentive Adjustment Chart.
9) Energy savings rating is based on the SRCC OG-300 published rating or the UNSE-RECPP Space Heating Calculator. The customer contribution must be a minimum of 15% of the project cost after accounting for and applying all available Federal and State incentives.
10) Rate applies to forecast/estimated first year energy savings only.
11) REC terms may be negotiated in excess of printed maximums to accommodate for higher initial payments.

Appendix 2: Glossary of Terms

ACC – Arizona Corporation Commission.

AZROC – Arizona Registrar of Contractors.

Applicant – Utility customer of record for the Utility Revenue Meter located at the installation site; a builder of the structure (residential or non-residential) who will reserve and install the Qualifying system; or for an off-grid Qualifying System, the property owner for the installation site located within a Utility's service territory.

Arizona Business License – A business license issued by the ACC.

Cancelled – Reservation Status indicating that a Reservation has been terminated, funding is no longer allocated, and the utility has removed the reservation from the funding queue.

Cancellation – The termination of the Reservation.

Commissioned – Qualifying System certified to be in operation.

Commissioning Package – Written verification signed by the installer and the customer confirming that the system has been installed in conformance with the approved reservation and that the system is ready for operation.

Conforming Project – Any project utilizing a renewable technology listed in Attachment D.

Conformance Inspection – Inspection performed by the utility to verify that the system has been installed and operates in conformance with the Reservation application.

Customer – Utility customer of record for the Utility Revenue Meter located at the installation site or a builder of the structure (residential or non-residential) who will reserve and install the Qualifying System.

Extension – The extension of the Reservation Timeframe.

Installer – The entity or individual responsible for the installation of a qualifying system.

Interconnection Inspection – Inspection performed by the utility to confirm that the system can be safely interconnected to the power grid.

Non-Conforming Project – Non-conforming projects include, but are not limited to, projects with staged completion dates, multi-customer or multi-system projects, projects involving more than one technology, projects requiring new or unique agreement terms, projects with technologies for which qualification standards have not been developed or projects requiring non-standard timeframes.

Performance Based Incentive (**"PBI"**) – Incentive based on a rate per actual kWh output or on equivalent kWh of energy savings.

Project Costs – System Costs plus financing costs.

Proof of Project Advancement – Documentation demonstrating that a project is progressing on schedule and is staged for Commissioning on or before the end of the Reservation Timeframe.

Qualifying System – Distributed renewable energy systems meeting the qualifications for production of qualified Renewable Energy Credits in Arizona acceptable to the Arizona Corporation Commission as they may be defined for affected utilities to meet any renewable energy standards.

Renewable Energy Credit ("REC") – One Renewable Energy Credit is created for each kWh, or kWh equivalent for non-generating resources, derived from an eligible renewable energy resource. RECs shall include all environmental attributes associated with the production of the eligible renewable energy resource.

Reservation – A dollar amount committed by the utility to fund a project if all program requirements are met.

Reservation Status – Indicator relating to approval or denial of a Reservation request. If a Reservation is approved, the Reservation Status is Reserved. If a Reservation request is denied, the Reservation Status is either Cancelled or Wait Listed.

Reserved – Status indicating the acceptance of a Reservation request.

Reservation Timeframe – The duration of the utility's funding commitment for a Reservation.

System Costs – Costs associated with the Qualifying System components, direct energy distribution, system control/metering, and standard installation costs directly related to the installation of the Qualifying System.

Up Front Incentive (UFI) – One time incentive payment based on system capacity or estimated energy kWh production rather than on measured system output.

Wait List – Status indicating Applicant has met program requirements, but the Utility has insufficient funding to commit to funding the project.

Exhibit 6

UniSource Energy SERVICES

Renewable Energy Standard and Tariff Surcharge
REST-TS1
Renewable Energy Program Expense Recovery

APPLICABILITY

Mandatory, non-bypassable surcharge applied to all energy consumed by all customers throughout Company's entire electric service area.

RATES

For all energy billed which is supplied by the Company to the customer, the price shall be $0.009989 per kWh of metered monthly energy consumption on all kWh consumed per meter that month up to and including a monthly cap of:

For Residential customers:	$14.07 per month
For Commercial customers:	$219.00 per month
For Industrial customers:	4,223.00 per month

Note: An industrial customer is one with monthly demand equal to or greater than 3,000 kW.

For non-metered services, the lesser of the load profile or otherwise estimated kWh required to provide the service in question, or the service's contract kWh shall be used in the calculation of the surcharge.

This charge will be a line item on customer bills reading "Renewable Energy Standard Tariff."

RULES AND REGULATIONS

The standard Rules and Regulations of the Company as on file with the Arizona Corporation Commission shall apply where not inconsistent with this pricing plan.

TAX CLAUSE

To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

UniSource Energy SERVICES

Renewable Energy Standard and Tariff Surcharge
REST-TS1
Renewable Energy Program Expense Recovery

APPLICABILITY

Mandatory, non-bypassable surcharge applied to all energy consumed by all customers throughout Company's entire electric service area.

RATES

For all energy billed which is supplied by the Company to the customer, the price shall be $0.00998971~~34~~ per kWh of metered monthly energy consumption on all kWh consumed per meter that month up to and including a monthly cap of:

For Residential customers:	$14.07~~9.00~~ per month
For Commercial customers:	$219.00~~140.00~~ per month
For Industrial customers:	~~$~~4,223.00~~2,700.00~~ per month

Note: An industrial customer is one with monthly demand equal to or greater than 3,000 kW.

For non-metered services, the lesser of the load profile or otherwise estimated kWh required to provide the service in question, or the service's contract kWh shall be used in the calculation of the surcharge.

This charge will be a line item on customer bills reading "Renewable Energy Standard Tariff."

RULES AND REGULATIONS

The standard Rules and Regulations of the Company as on file with the Arizona Corporation Commission shall apply where not inconsistent with this pricing plan.

TAX CLAUSE

To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

Exhibit 7

UniSource Energy SERVICES

Customer Self-Directed Renewable Energy Option
REST-TS2
Renewable Energy Standard Tariff

AVAILABILITY

Open to all Eligible Customers as defined at A.A.C. R14-02-1801.H.

APPLICABILITY

Any Eligible Customer that applies to the Company under this program and receives approval shall participate at its option.

PARTICIPATION PROCESS

An Eligible Customer seeking to participate shall submit to the Company a written application that describes the Distributed Renewable Energy (DRE) resources or facilities that it proposes to install and the estimated costs of the project. The Company shall have sixty (60) calendar days to evaluate and respond in writing to the Eligible Customer, either accepting or declining the project. If accepted, the Customer shall be reimbursed up to the actual dollar amounts of customer surcharge paid under the REST-TS1Tariff in any calendar year in which DRE facilities are installed as part of the accepted project. To qualify for such funds, the Customer shall provide at least half of the funding necessary to complete the project described in the accepted application, and shall provide the Company with sufficient and reasonable written documentation of the project's costs. *Customer shall submit their application prior to May 1 of a given year to apply for funding in the following calendar year.*

FACILITIES INSTALLED

The maintenance and repair of the facilities installed by a Customer under this program shall be the responsibility of the Customer following completion of the project. In order to be accepted by the Company for reimbursement purposes, the project shall, at a minimum, conform to the Company's System Qualification standards on file with the Commission. (REST Impolementation Plan, Renewable Energy Credit Purchase Program – RECPP, Distributed Generation Interconnection Requirements, Net Metering Tariff, Company's Interconnection Manual)

PAYMENTS AND CREDITS

All funds reimbursed by the Company to the Customer for installation of approved DRE facilities shall be paid on an annual basis no later than March 30th of each calendar year. All Renewable Energy Credits derived from a project, including generation and Extra Credit Multipliers, shall become the property of the Company and shall be applied towards the Company's Annual Renewable Energy Requirement as defined in A.A.C. R14-2-1801.B.

RULES AND REGULATIONS

The standard Rules and Regulations of the Company as on file with the Arizona Corporation Commission shall apply where not inconsistent with this pricing plan.

RELATED SCHEDULES

- REST-TS1 - Renewable Energy Program Expense Recovery

UniSource Energy SERVICES

Customer Self-Directed Renewable Energy Option
REST-TS2
Renewable Energy Standard Tariff

AVAILABILITY

Open to all Eligible Customers as defined at A.A.C. R14-02-1801.H.

APPLICABILITY

Any Eligible Customer that applies to the Company under this program and receives approval shall participate at its option.

PARTICIPATION PROCESS

An Eligible Customer seeking to participate shall submit to the Company a written application that describes the Distributed Renewable Energy (DRE) resources or facilities that it proposes to install and the estimated costs of the project. The Company shall have sixty (60) calendar days to evaluate and respond in writing to the Eligible Customer, either accepting or declining the project. If accepted, the Customer shall be reimbursed up to the actual dollar amounts of customer surcharge paid under the REST-TS1Tariff in any calendar year in which DRE facilities are installed as part of the accepted project. To qualify for such funds, the Customer shall provide at least half of the funding necessary to complete the project described in the accepted application, and shall provide the Company with sufficient and reasonable written documentation of the project's costs. Customer shall submit their application prior to May 1 of a given year to apply for funding in the following calendar year.

FACILITIES INSTALLED

The maintenance and repair of the facilities installed by a Customer under this program shall be the responsibility of the Customer following completion of the project. In order to be accepted by the Company for reimbursement purposes, the project shall, at a minimum, conform to the Company's System Qualification standards on file with the Commission. (REST Impolementation Plan, Renewable Energy Credit Purchase Program – RECPP, Distributed Generation Interconnection Requirements, Net Metering Tariff, Company's Interconnection Manual)

PAYMENTS AND CREDITS

All funds reimbursed by the Company to the Customer for installation of approved DRE facilities shall be paid on an annual basis no later than March 30th of each calendar year. All Renewable Energy Credits derived from a project, including generation and Extra Credit Multipliers, shall become the property of the Company and shall be applied towards the Company's Annual Renewable Energy Requirement as defined in A.A.C. R14-2-1801.B.

RULES AND REGULATIONS

The standard Rules and Regulations of the Company as on file with the Arizona Corporation Commission shall apply where not inconsistent with this pricing plan.

RELATED SCHEDULES

- REST-TS1 - Renewable Energy Program Expense Recovery

Exhibit 8

UNS Electric Exhibit 8

Research and Development

In order to support the adoption of renewable energy, UNS Electric, Inc. ("UNS Electric") dedicates some of its current Renewable Energy Standard Tariff ("REST") funding towards research and development ("R&D"). UNS Electric intends to continue its commitment to furthering renewable energy research by participating in the following projects.

I. Arizona Research Institute for Solar Energy

The Arizona Research Institute for Solar Energy ("AzRISE") at the University of Arizona conducts fundamental interdisciplinary solar energy research, backed by accurate and realistic economic analyses. This research is used to further the deployment and practical implementation of solar energy solutions. UNS Electric believes that AzRISE's work furthers the goals of the Renewable Energy Standard and helps the Company to meet its own renewable goals.

In this partnership, AzRISE will be responsible for ongoing data management for the Tucson Electric Power Company ("TEP") Solar Test yard that UNS Electric has open access to and ongoing distributed generation production analysis specific to Arizona. Both of these projects represent significant contributions to the local knowledge base, which are necessary to make the use of solar energy more effective. This project will cost $50,000. UNS Electric will also participate in TEP's R&D programs without additional cost to UNS Electric.

Exhibit 9

Bright Arizona Community Solar Project

Table of Contents

I. Introduction

UniSource Energy Services ("UES") proposes an option that provides customers with greater accessibility to solar distributed generation ("DG") that does not require the customer to invest in a self-owned system, thereby avoiding large up-front costs and a long-term commitment. This program will reduce economic and other feasibility barriers to solar energy for thousands of customers and will assist the Company in meeting the DG component of the Renewable Energy Standard and Tariff ("REST") rules. This proposal will work in conjunction with UES's current residential and commercial programs. A number of factors, including significant customer up-front capital requirements, have convinced UES that another viable supplement to its current renewable DG programs should be explored. UES has therefore designed a supplement that aligns the customer, producer, Company, and community interests: The Bright Arizona Community Solar project ("Project" or "Bright Arizona").

The Project will consist of several distributed 1-2 MW block solar arrays throughout the UES service territory, strategically tied into distribution infrastructure. UES will work with the jurisdictions in Mohave and Santa Cruz Counties when evaluating potential sites. Interested UES customers, as well as local institutional stakeholders, will be able to participate in the Project, making it a true community effort. UES customers will be able purchase "blocks" of solar from the distributed generation arrays, in the form of a new tariff, with the knowledge that the energy they are purchasing is real, renewable, reliable, and locally generated.

The benefits of this Tariff are that it:

1. Does not require any up-front capital expenditures by the customer;
2. Does not require any long-term customer commitment;
3. Provides access to lower cost solar energy to all customers;
4. Increases safety via direct utility control of electrons to prevent islanding and/or backfeed situations;
5. Increases reliability as it will be placed in strategically useful positions on the distribution network;
6. Alleviates any shading, tree, rooftop, or homeowner association issues;
7. Allows for scalable energy purchases;
8. Should increase residential customer participation in DG;
9. Provides our customers with greater access to more affordable renewable energy;
10. Cheaper overall cost to our Customers by capturing the economies of scale; and
11. Enhances the national image of Mohave and Santa Cruz counties.

The Project will comprise the following components:

1. A solar PV array;
2. A fixed-price tariff[1];

The solar array will allow UES customers to purchase renewable energy for their use at various levels. The intent is that the customer would be purchasing renewable energy from a facility in the UES service territory that is visible—it will be as tangible as having a PV unit on their own roof, but without the responsibilities of actually owning and maintaining their own equipment. Many UES customers have requested an alternative energy option and have expressed that the best source to find this option should come from their local utility.

Customers can purchase "blocks" of solar power under the Bright Arizona Community Solar Tariff at a 2 cent premium to current rates. This 2 cent premium is credited back to the REST funds to reduce to overall rate impact of the REST program. While the price of the solar tariff will be slightly higher than current prices, the tariff will remain fixed over a term of up to 10 years. Bright Arizona Tariff customers would not be charged fuel costs (including PPFAC) applied on the solar block ("Solar Capacity") portion of the tariff. However the non-variable portion of the rate will change with the otherwise applicable tariff with rate case filings.

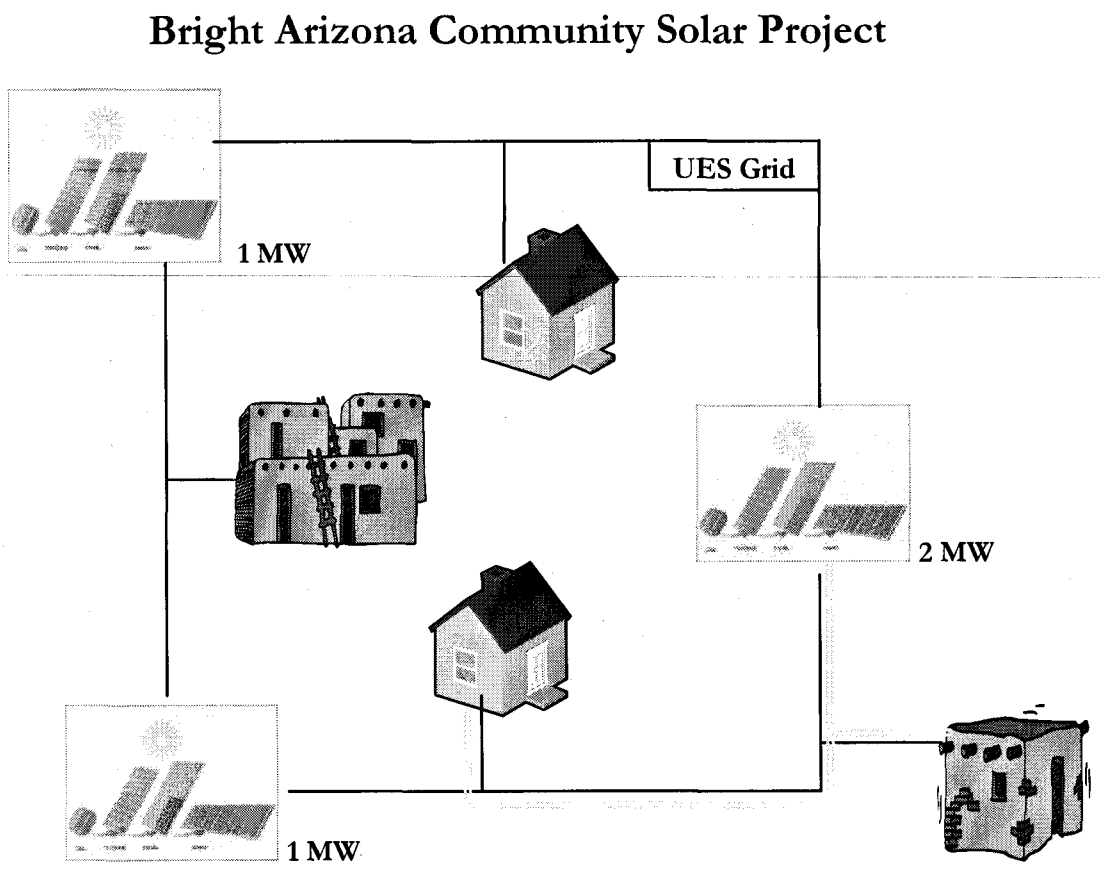
II. Program Structure

Project Mechanism: How it Works

This project brings local solar energy to the customer without the high up-front cost that self-owned solar power entails. This allows customers new flexibility in meeting their energy needs with renewable energy, at a rate that is affordable. UES will either enter into a power purchase agreement with a developer, or own and operate utility-scale priced DG solar arrays that are placed strategically around the UES service territory. Customers will be able to take advantage of the resulting economies of scale encompassing the panels, inverters, and Balance-of-System costs. Figure 1 below depicts how the Project works in terms of the array layout, grid interconnection and customer participation.

[1] The tariffs are set forth in Attachment 1.

Figure 1. Community Solar



In order to be a viable option, solar energy needs to be available to all customer classes, including lower-income customers. This project takes a critical step toward precisely this: customers that do not have access to capital can access solar energy through this Project. The cost to participate, found in more detail in Section V will be approximately 11 cents per kWh, purchased in "blocks" of 150 kWh of locally produced solar energy (representative of a power increment of 1 kW). This solar energy would displace the customer's energy use from traditional generation at equivalent levels of demand and results in an additional cost of only $1.50 per block per month compared to conventional energy supply.

This Project mimics the traditional DG program by simulating customer "ownership" of solar energy, through the monthly purchase of solar power increments. If this program is undersubscribed by customers, the projects will be utilized to meet the Company's REST requirements for non-DG renewable energy, which is an important component of UES's increasingly diversified resource portfolio.

III. Financing and Pricing

This project would be funded through one of two proposed funding mechanisms as appropriate opportunities arise:

(1) Power Purchase Agreement (PPA); or

(2) UES-owned (UES Capital).

Each of the above options would apply as opportunities become available, providing for the optimum value. The first phase of this Project would be a utility-owned pilot program in 2010 – 2014 from UNSE's "Bright Arizona Solar Ownership Plan" described in Exhibit 6 of Attachment 1.

Under each of these options, the result should produce a REC cost that will be substantially lower than the cost of a customer-sited solar array and even less than a wholesale PPA or ownership. UES estimates that the overall REC price from the REST funds would equal approximately 8¢ per kWh—a substantial reduction from the current credit purchase program of 16¢ in 2010.

1) Power Purchase Agreement ("PPA"):

One method of meeting the current RES requirements is procurement for utility scale renewable energy through a PPA between the utility and a private developer owning the facility. UES envisions that the same process could apply to projects for the Bright Arizona Community Solar Tariff. UES has such a PPA for a combination wind/solar project that is waiting for ACC approval.

2) UES Capital:

This is the most straightforward and familiar structure applied in this context, and is the usual procedure for utility-owned asset recovery. UES would own and operate the solar system in this instance. However, UES would request that it be able to recover the carrying charges on the asset through the REST until established in rate base in its next rate proceeding. The details of this structure for the Pilot phase of the Project are described more fully in Exhibit 6 of Attachment 1.

IV. Tariff

The Bright Arizona Community Solar Tariff that will be offered to residential and commercial customers is designed to result in a 2-cent premium on the standard equivalent class rate. The customer will buy blocks of solar capacity in 1 kW increments that will provide 150 kWh of energy (per month) in order to best mimic a customer-owned solar array, but the block purchase is translated into a new customer solar tariff. The customer also receives the "roll-over" benefit of the Net Metering Rule by allowing excess purchased solar energy to be used in subsequent months, up to one year. This tariff fixes the solar capacity component of the tariff for a maximum of ten years (the customer may cancel at any time before that), thereby providing the same hedge against future energy price increases that a rooftop system would provide. For this reason, and because of a public preference for sourcing their electricity use from renewable sources, UES believes that the solar tariff will be well-subscribed and well-received. The following chart summarizes tariff options (the proposed tariffs in Appendix 1 hereto set forth the full details of the three rate class tariff options.)

Rates by Customer Class	Delivery Services -Energy	Power Supply Charges			Total
		Base Power	PPFAC	Solar Capacity	
Standard Rate Residential Service RS-02-01	$0.017263	$0.077993	*Varies*	N/A	$0.095256
Residential Service Solar Block RateRS-02-01	$0.017263	N/A	N/A	$0.087993	$0.105256
Standard Small General Service GS-02-10	$0.028457	$0.075738	*Varies*	N/A	$0.104195
Small General Service Solar Block Rate GS-02-10	$0.028457	N/A	N/A	$0.085738	$0.114195
Standard Large General Service LGS-02-13	$0.003254	$0.067062	*Varies*	N/A	$0.070316
Large General Service Solar Block Rate LGS-02-13	$0.003254	N/A	N/A	$0.077062	$0.080316

V. Locations

Building many MWs of DG through PPA's and utility ownership will allow UES to capture economies of scale. For the pilot program phase, it is the Company's plan to invest in arrays in strategically useful locations. Multiple locations within the local are being examined as potential sites.

VI. Construction Schedule

If approved, the Pilot Program, as described in Exhibit 6 of Attachment 1, will begin construction in 2011 and will have projects each year through 2014. The first project could be on-line in late 2011. Marketing efforts will run in conjunction with permitting and construction: up to 1,000 customers can sign up for the program for each 1 MW of installed solar capacity.

VII. Branding & Marketing

Branding

The Project will utilize a traditional branding strategy, which facilitates recall (brand recognition), and positive perception and associations among customers, regulators, media, program partners, and other stakeholders.

Marketing

The aggressive, adoption-oriented marketing campaign that is crucial to the uptake up this Project will be funded by the REST. Bright Arizona will be positioned as an opportunity for residential customers to participate in solar energy generation, and essentially derive a portion of their total power demand from this local PV array. Bright Arizona, amongst its other benefits, will be tacitly offered as an alternative to the GreenWatts program, which is often *perceived* as a donation program rather than a clean energy purchase program.

A combination of paid advertising, web visibility, news media exposure, collateral and promotional events will deliver the marketing messages and provide the call-to-action for increased local renewable energy. In addition, on-site or near-site signage — perhaps with a real-time solar production display — will call attention to the array.

Bright Arizona will offer customers an attractive alternative to solar PV power without having to install their own rooftop system. The target audiences for Bright Arizona adoption include:

- Renters
- Homeowners without adequate south-facing rooftop exposure
- Customers in shaded areas
- Customers with limited capital resources
- Small-business owners with inadequate space or lack of building ownership
- Non-profit organizations
- Customers lacking access to up-front capital
- Customers unable to sign long-term contracts

The marketing campaign will focus on ease of customer involvement and control over how their energy is produced. Although societal benefits should not be ignored, marketing messages would encourage the perception that customers are buying solar power, rather than making a donation to a worthy cause. Additionally, recent studies have shown that people act according to perceived social

norms statistically more than to the idea of "doing what's right." Therefore, a key component to the marketing campaign should include an emphasis on the growing market share of solar power.

UES will develop a series of community events that are geared to introduce, educate and promote the benefits of investing in Bright Arizona. In addition to traditional media advertising, UES will work closely with the local organizations in the following possible ways:

- Partner with cable TV to develop a 30-minute program on Bright Arizona. The program would highlight the various technologies involved, energy storage, grid connection and monitoring systems. This program would not only educate viewers on solar energy production but show them that they now have a clear choice in how their electricity is generated. This program could also link personal energy use to the greater domestic and international context of energy cycles and its consequences, therefore connecting the dots among consumer behavior, technology, and energy markets.

- Work with local schools in developing educational programs that include field trips to view the Bright Arizona Community Solar Array.

- Produce a series of bill inserts to provide information about, and promote the purchase of, solar energy from the Bright Arizona array.

- Niche target customers who live in condos and apartments that are unable to install individual rooftop solar systems.

- Create a robust on-line campaign to promote customer adoption.

- Construct and post a solar energy tracker on uesaz.com where viewers can see how much energy Bright Arizona is producing at any given time.

- Partner with the Green Media Alliance in promoting Bright Arizona through targeted media outlets that support green living.

VIII. Distribution/Transmission Capacity Assessment

Specific project locations will be directed by UES. This will allow the Company to control the placement of the array and maximize its usefulness to the UES system. The best locations are being identified on UES's system: this information will be used to appropriately site and size the PV projects. This is a significant advantage of utility-sited distributed generation over customer/developer sited systems, as the latter provides the utility no control over the circuit choice and/or location.

IX. Conclusion

In order for UES to efficiently and effectively meet its DG mandate, a supplement to its existing programs has been suggested in the form elaborated in this plan. The proposed Bright Arizona Community Solar project will give renewable energy access to all UES customers. In conjunction with existing programs, the solar array will expand UES REST offerings to more demographic and socio-economic groups, thereby increasing distributed generation participation tremendously.

Many benefits of this system make it a viable supplement to UES program offerings in addition to enhanced customer access and participation. Economies of scale will make more effective use of REST funds. UES site selection will ensure that the system benefits to UES's grid are maximized. An exciting project may gain national attention and give the Lake Havasu City, Kingman and Nogales communities a sense of ownership in an endeavor that is environmentally sustainable, creates quality jobs, and takes a leadership role in electric utility distribution in the United States.

APPENDIX 1

Tariffs—Residential, Small General Service,

Large General Service

Pricing Plan RS-02-01

Residential Electric Solar Service

AVAILABILITY

Available throughout the Company's entire electric service area where the facilities of the Company are of adequate capacity and are adjacent to the premises. The Bright Tucson Community Solar Program is an experimental program available to standard offer Residential customers seeking to purchase electricity from solar generation sources. The rates herein are available for subscription January 1, 2011 through December 31, 2020.

APPLICABILITY

To all single phase (subject to availability at point of delivery) residential electric service in individual private dwellings and individually metered apartments when all service is supplied at one point of delivery and energy is metered through one meter. Under this program customers may contract for service in multiples of blocks (Solar Blocks) of 1kW per block which is equivalent to 150 kWh per month per block for billing purposes. The Company may limit subscription to the program based upon solar generation resources available.

Not applicable to resale, breakdown, standby, auxiliary service, or service to individual motors exceeding 40 amperes at a rating of 230 volts or which will cause excessive voltage fluctuations.

CHARACTER OF SERVICE

The service shall be single-phase, 60 Hertz, and at one standard nominal voltage as mutually agreed and subject to availability at point of delivery.

RATE

A monthly net bill at the following rate plus any adjustments incorporated in this pricing plan:

BUNDLED STANDARD OFFER SERVICE - SUMMARY OF CUSTOMER AND ENERGY CHARGES

Customer Charge Components of Delivery Services:
Customer Charge, Single Phase service and minimum bill $7.50 per month

Energy Charge Components are unbundled into Delivery Services-Energy and Power Supply Charge.
All energy charges below are on a per kWh basis for all summer and winter months.

		Power Supply Charges[2]			
	Delivery Services-Energy[1]	Base Power	PPFAC[2]	Solar Capacity[3]	Total[4]
Standard Rate, per kWh	$0.017263	$0.077993	*Varies*	N/A	$0.095256
Solar Block Rate, per	$0.017263	N/A	N/A	$0.087993	$0.105256

kWh					

1. Delivery Services-Energy is a bundled charge that includes: Transmission, Sub-transmission, Local Delivery Energy and Production not included in Power Supply.

2. The Power Supply Charges shall be comprised of the Base Power, Purchased Power and Fuel Adjustment Clause ("PPFAC"), and Solar Capacity. The PPFAC is a per kWh adjustment in accordance with Rider-1 PPFAC and reflects increases or decreases in the cost to the Company for energy either generated or purchased above or below the base cost per kWh sold. PPFAC may vary over time as the cost of energy changes relative to the Base Power component of Power Supply Charges. The Base Power and PPFAC charge is not applicable to contracted Solar Blocks.

3. The Solar Capacity Charge. The Solar Capacity charge is the contracted rate charged for Power Supply per kWh for each contracted Solar block. Power Supply Charges for Base Power and the PPFAC are not applicable to be charged to the contracted Solar Blocks.

4. Total is calculated above for illustrative purposes, and excludes PPFAC, because PPFAC varies over time pursuant to Rider-1 PPFAC. While only non-variable components are included in the illustration above, a Customer's actual bill in any given billing month will reflect the applicable PPFAC for that billing month for all standard rate kWhs.

TERMS AND CONDITIONS

1. The Company agrees to maintain the Solar Block energy price at $0.087993 per kWh for contracted solar capacity through December 31, 2020 - for uninterrupted service, at the originally contracted service address.

2. Should the Customer discontinue service for any reason prior to December 31, 2020, the Customer will need to apply for service under a current and available pricing plan at that time.

3. The Customer is responsible for paying each month for the Solar Capacity charges calculated as his contracted amount (in kWh) multiplied by the Solar Capacity charge. Should Kilowatt-hours (kWhs) billed under the contracted amount exceed actual usage in a month, the Customer will be responsible for the total contracted amount times the Solar Capacity charge.

   For example: Customer contracts two Solar Blocks for a total of 300 kWh. The Customer's actual usage in a month is 250 kWh. The Customer will be billed $0.105256 per kWh for 250 kWhs and $0.087993 (Solar Capacity charge) for the remaining 50 kWhs that were contracted but not used.

4. Excess Solar Block Energy(kWh): If for a billing month the Customer's contract Solar Blocks energy exceed the energy used by the Customer, the excess Solar Block energy shall be rolled forward and credited against usage in the next billing period. Any excess Solar Block energy remaining upon termination of service will be purchased back from the customer at $0.087993 per kWh.

   For example: Customer contracts two Solar Blocks for a total of 300 kWh. The Customer's actual usage in a month is 250 kWh. The Customer shall receive a credit of 50 solar block kWh to be carried forward to net against actual usage in subsequent period. If in the subsequent period they only use 100 kWh of their 300 kWh contracted and then would carry forward 250 kWh to the next period until consumed or a final bill is rendered. If the second month in the example were the customer's final bill they would receive a credit for 250 kWh @ $0.087993 per kWh.

5. The Customer's contract Solar Block(s) are exempt from the following Green Energy Charges:
   a. Demand Side Management Surcharge, Rider R-2 DSMS,
   b. Renewable Energy Standard and Tariff Surcharge, REST-TS1.

6. The non-contracted blocks hereunder this pricing plan are subject to change upon Commission approval.

BUNDLED STANDARD OFFER SERVICE CONSISTS OF THE FOLLOWING UNBUNDLED COMPONENTS:

Customer Charge Components of Delivery Services (Unbundling):

Meter Services	$2.227 per month
Meter Reading	$0.688 per month
Billing & Collection	$3.601 per month
Customer Delivery	$0.984 per month
	$7.50 per month

Energy Charge Components of Delivery Services (Unbundling) ($/kWh):

Component	Rate per kWh
Delivery Services- Energy	
Transmission	$0.003526
Sub-Transmission	$0.003991
Local Delivery Energy	$0.009371
Production not included in Power Supply	$0.000374

Power Supply Charges:

Base Power	$0.077993
PPFAC	Varies

	Per Contracted Block
Solar Capacity	$0.087993

TAX CLAUSE

To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

RULES AND REGULATIONS
The standard Rules and Regulations of the Company as on file with the Arizona Corporation Commission shall apply where not inconsistent with this pricing plan.

Pricing Plan SGS-02-10
Small General Electric Solar Service

AVAILABILITY

Available throughout the Company's entire electric service area where the facilities of the Company are of adequate capacity and are adjacent to the premises. The Bright Tucson Community Solar Program is an experimental program available to standard offer Small General Service customers seeking to purchase electricity from solar generation sources. The rates herein are available for subscription January 1, 2011 through December 31, 2020.

APPLICABILITY

This service is normally provided at one point of delivery measured through one meter. More than one service and meter may be provided in instances where such is permitted under 230.2 (A) through (D) of the National Electric Code with prior approval of the Unisource Electric Engineering Department.

To any customer where the monthly usage is not more than 7,500 kWh in any two (2) consecutive months. Customers who use more than 7,500 kWh for two (2) or more consecutive months shall not be eligible for this pricing plan and shall take service under the Large General Service pricing plan. However, service is available for customer-owned, operated, and maintained area, street, or stadium lighting, and for firm irrigation service with a maximum monthly demand less than 25 kW

Under this program customers may contract for service in multiples of blocks (Solar Blocks) of 1kW per block which is equivalent to 150 kWh per month per block for billing purposes. The Company may limit subscription to the program based upon solar generation resources available.

CHARACTER OF SERVICE
Single phase, 60 hertz at one standard voltage. Three phase for eligible loads over 5 kW.

RATE
A monthly net bill at the following rate plus any adjustments incorporated in this pricing plan:

BUNDLED STANDARD OFFER SERVICE - SUMMARY OF CUSTOMER AND ENERGY CHARGES

Customer Charge Components of Delivery Services:
Customer Charge, Single Phase service and minimum bill $ 12.00 per month

Energy Charge Components are unbundled into Delivery Services-Energy and Power Supply Charge.
All energy charges below are on a per kWh basis for all summer and winter months.

		Power Supply Charges[2]			
	Delivery Services-Energy[1]	Base Power	PPFAC[2]	Solar Capacity[3]	Total[4]

Standard Rate, per kWh	$0.028457	$0.075738	*Varies*	N/A	$0.104195
Solar Block Rate, per kWh	$0.028457	N/A	N/A	$0.085738	$0.114195

1. Delivery Services-Energy is a bundled charge that includes: Transmission, Sub-transmission, Local Delivery Energy and Production not included in Power Supply.

2. The Power Supply Charges shall be comprised of the Base Power, Purchased Power and Fuel Adjustment Clause ("PPFAC"), and Solar Capacity. The PPFAC is a per kWh adjustment in accordance with Rider-1 PPFAC and reflects increases or decreases in the cost to the Company for energy either generated or purchased above or below the base cost per kWh sold. PPFAC may vary over time as the cost of energy changes relative to the Base Power component of Power Supply Charges. The Base Power and PPFAC charge is not applicable to contracted Solar Blocks.

5. The Solar Capacity Charge. The Solar Capacity charge is the contracted rate charged for Power Supply per kWh for each contracted Solar block. Power Supply Charges for Base Power and the PPFAC are not applicable to be charged to the contracted Solar Blocks.

6. Total is calculated above for illustrative purposes, and excludes PPFAC, because PPFAC varies over time pursuant to Rider-1 PPFAC. While only non-variable components are included in the illustration above, a Customer's actual bill in any given billing month will reflect the applicable PPFAC for that billing month for all standard rate kWhs.

TERMS AND CONDITIONS

7. The Company agrees to maintain the Solar Block energy price at $0.085738per kWh for contracted solar capacity through December 31, 2020 - for uninterrupted service, at the originally contracted service address.

8. Should the Customer discontinue service for any reason prior to December 31, 2020, the Customer will need to apply for service under a current and available pricing plan at that time.

9. The Customer is responsible for paying each month for the Solar Capacity charges calculated as his contracted amount (in kWh) multiplied by the Solar Capacity charge. Should Kilowatt-hours (kWhs) billed under the contracted amount exceed actual usage in a month, the Customer will be responsible for the total contracted amount times the Solar Capacity charge.

   For example: Customer contracts two Solar Blocks for a total of 300 kWh. The Customer's actual usage in a month is 250 kWh. The Customer will be billed $0.114195 per kWh for 250 kWhs and $0.085738 (Solar Capacity charge) for the remaining 50 kWhs that were contracted but not used.

10. Excess Solar Block Energy(kWh): If for a billing month the Customer's contract Solar Blocks energy exceed the energy used by the Customer, the excess Solar Block energy shall be rolled forward and credited against usage in the next billing period. Any excess Solar Block energy remaining upon termination of service will be purchased back from the customer at $0.085738per kWh.

    For example: Customer contracts two Solar Blocks for a total of 300 kWh. The Customer's actual usage in a month is 250 kWh. The Customer shall receive a credit of 50 solar block kWh to be carried forward to net against actual usage in subsequent period. If in the subsequent period they only use 100 kWh of their 300 kWh contracted and then would carry forward 250 kWh to the next period until consumed or a final bill is rendered. If the second month in the example were the customer's final bill they would receive a credit for 250 kWh @ $0.085738per kWh.

11. The Customer's contract Solar Block(s) are exempt from the following Green Energy Charges:
    a. Demand Side Management Surcharge, Rider R-2 DSMS,
    b. Renewable Energy Standard and Tariff Surcharge, REST-TS1.

12. The non-contracted blocks hereunder this pricing plan are subject to change upon Commission approval.

BUNDLED STANDARD OFFER SERVICE CONSISTS OF THE FOLLOWING UNBUNDLED COMPONENTS:

Customer Charge Components of Delivery Services (Unbundling):

Meter Services	$3.46 per month
Meter Reading	$1.173 per month
Billing & Collection	$6.123 per month
Customer Delivery	$1.245 per month
	$12.00 per month

Energy Charge Components of Delivery Services (Unbundling) ($/kWh):

Component	Rate per kWh
Delivery Services- Energy	
Transmission	$0.002662
Sub-Transmission	$0.003218
Local Delivery Energy	$0.022225
Production not included in Power Supply	$0.000352

Power Supply Charges:

Base Power	$0.075738
PPFAC	Varies

	Per Contracted Block
Solar Capacity	$0.085738

TAX CLAUSE

To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

RULES AND REGULATIONS
The standard Rules and Regulations of the Company as on file with the Arizona Corporation Commission shall apply where not inconsistent with this pricing plan.

Pricing Plan LGS-02-13

Large General Electric Solar Service

AVAILABILITY

Available throughout the Company's entire electric service area where the facilities of the Company are of adequate capacity and are adjacent to the premises. The Bright Tucson Community Solar Program is an experimental program available to standard offer Large General Serive customers seeking to purchase electricity from solar generation sources. The rates herein are available for subscription January 1, 2011 through December 31, 2020.

APPLICABILITY

This service is normally provided at one point of delivery measured through one meter. More than one service and meter may be provided in instances where such is permitted under 230.2 (A) through (D) of the National Electric Code with prior approval of the Unisource Electric Engineering Department. Customers may choose time-of-use service as well.

To any customer where the maximum monthly demand is less than 1,000 kW.

Under this program customers may contract for service in multiples of blocks (Solar Blocks) of 1kW per block which is equivalent to 150 kWh per month per block for billing purposes. The Company may limit subscription to the program based upon solar generation resources available.

CHARACTER OF SERVICE
Single or three phase, 60 hertz, at the Company's standard voltages that are available within the vicinity of the Customer's premises.

RATE
A monthly net bill at the following rate plus any adjustments incorporated in this pricing plan:

BUNDLED STANDARD OFFER SERVICE - SUMMARY OF CUSTOMER AND ENERGY CHARGES

Customer Charge Components of Delivery Services:	
Customer Charge, Single Phase service and minimum bill	$15.50 per month
Customer Charge, Single Phase service and minimum bill (Optional TOU)	$20.40 per month
Demand Charge Component of Delivery Services: All demand charges are on a per kW basis	
Demand Charge	$10.71 per KW

DETERMINATION OF BILLING DEMAND

Normal service: If the time-of-use option is not chosen, the monthly billing demand shall be the highest measured fifteen (15) minute integrated reading of the demand meter during the billing month.

Time-of-Use: If time-of-use service is chosen, the monthly billing demand shall be the higher of:
(i) the highest measured fifteen (15) minute integrated reading of the demand meter during the on-peak hours of the billing period,
(ii) one-half the highest measured fifteen (15) minute integrated reading of the demand meter during the off-peak hours, or
(iii) the contract capacity.

ON-PEAK HOURS
During the months of May through October, on-peak hours are those hours between 11:00 a.m. and 10:00 p.m. each day, Monday through Saturday. All other hours shall be considered off-peak hours.

During the months of November through April, on-peak hours are those hours between 7:00 a.m. and 7:00 p.m. each day, Monday through Friday. All other hours shall be considered off-peak hours.

		Power Supply Charges[2]			
	Delivery Services-Energy[1]	Base Power	PPFAC [2]	Solar Capacity[3]	Total[4]
Standard Rate, per kWh	$0.003254	$0.067062	*Varies*	N/A	$0.070316
Solar Block Rate, per kWh	$0.003254	N/A	N/A	$0.077062	$0.080316

1. Delivery Services-Energy is a bundled charge that includes: Transmission, Sub-transmission, Local Delivery Energy and Production not included in Power Supply.

2. The Power Supply Charges shall be comprised of the Base Power, Purchased Power and Fuel Adjustment Clause ("PPFAC"), and Solar Capacity. The PPFAC is a per kWh adjustment in accordance with Rider-1 PPFAC and reflects increases or decreases in the cost to the Company for energy either generated or purchased above or below the base cost per kWh sold. PPFAC may vary over time as the cost of energy changes relative to the Base Power component of Power Supply Charges. The Base Power and PPFAC charge is not applicable to contracted Solar Blocks.

7. The Solar Capacity Charge. The Solar Capacity charge is the contracted rate charged for Power Supply per kWh for each contracted Solar block. Power Supply Charges for Base Power and the PPFAC are not applicable to be charged to the contracted Solar Blocks.

8. Total is calculated above for illustrative purposes, and excludes PPFAC, because PPFAC varies over time pursuant to Rider-1 PPFAC. While only non-variable components are included in the illustration above, a Customer's actual bill in any given billing month will reflect the applicable PPFAC for that billing month for all standard rate kWhs.

TERMS AND CONDITIONS

13. The Company agrees to maintain the Solar Block energy price at $0.077062 per kWh for contracted solar capacity through December 31, 2020 - for uninterrupted service, at the originally contracted service address.

14. Should the Customer discontinue service for any reason prior to December 31, 2020, the Customer will need to apply for service under a current and available pricing plan at that time.

15. The Customer is responsible for paying each month for the Solar Capacity charges calculated as his contracted amount (in kWh) multiplied by the Solar Capacity charge. Should Kilowatt-hours (kWhs) billed under the contracted amount exceed actual usage in a month, the Customer will be responsible for the total contracted amount times the Solar Capacity charge.

    For example: Customer contracts two Solar Blocks for a total of 300 kWh. The Customer's actual usage in a month is 250 kWh. The Customer will be billed $0.080316 per kWh for 250 kWhs and $$0.077062 (Solar Capacity charge) for the remaining 50 kWhs that were contracted but not used.

16. Excess Solar Block Energy(kWh): If for a billing month the Customer's contract Solar Blocks energy exceed the energy used by the Customer, the excess Solar Block energy shall be rolled forward and credited against usage in the next billing period. Any excess Solar Block energy remaining upon termination of service will be purchased back from the customer at $$0.077062 per kWh.

    For example: Customer contracts two Solar Blocks for a total of 300 kWh. The Customer's actual usage in a month is 250 kWh. The Customer shall receive a credit of 50 solar block kWh to be carried forward to net against actual usage in subsequent period. If in the subsequent period they only use 100 kWh of their 300 kWh contracted and then would carry forward 250 kWh to the next period until consumed or a final bill is rendered. If the second month in the example were the customer's final bill they would receive a credit for 250 kWh @ $0.077062 per kWh.

17. The Customer's contract Solar Block(s) are exempt from the following Green Energy Charges:
    a. Demand Side Management Surcharge, Rider R-2 DSMS,
    b. Renewable Energy Standard and Tariff Surcharge, REST-TS1.

18. The non-contracted blocks hereunder this pricing plan are subject to change upon Commission approval.

19. The Company may require a written contract and a minimum term of contract.

BUNDLED STANDARD OFFER SERVICE CONSISTS OF THE FOLLOWING UNBUNDLED COMPONENTS:

Customer Charge Components of Delivery Services (Unbundling):

Meter Services	$2.923 per month
Meter Reading	$1.185 per month
Billing & Collection	$6.145 per month
Customer Delivery	$5.247 per month
	$15.50 per month

Customer Charge (Optional TOU) Components of Delivery Services (Unbundling):

Meter Services	$ 1.386 per month
Meter Reading	$ 0.597 per month
Billing & Collection	$ 3.092 per month
Customer Delivery	$15.325 per month
	$ 20.40 per month

Energy Charge Components of Delivery Services (Unbundling) ($/kWh):

Component	Rate per kWh
Delivery Services- Energy	
Transmission	$0.001326
Sub-Transmission	$0.001600
Local Delivery Energy	$0.000228
Production not included in Power Supply	$0.000100

Power Supply Charges:

Base Power	$0.067062
PPFAC	Varies

	Per Contracted Block
Solar Capacity	$0.077062

TAX CLAUSE

To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

RULES AND REGULATIONS

The standard Rules and Regulations of the Company as on file with the Arizona Corporation Commission shall apply where not inconsistent with this pricing plan.